

Cornelia Rizek-Pfister

Damian Miller

Swiss Virtual Campus Status Report 2004

Consolidated Results of the Mandate
“SVC Status Reports and Project Monitoring”
concerning the Projects of the Impulse Program
2000–2003

Swiss Virtual Campus, Mandate “SVC Status Reports and Project Monitoring”, 2004–2005

Universität Zürich, Pädagogisches Institut, Abteilung Allgemeine Pädagogik, Prof. Dr. Jürgen Oelkers

Consolidated Results, Version 1.1 / June 2006

Table of Content

1. Introduction.....	4
1.1 Starting Point.....	4
1.2 Mandate.....	6
1.3 Aims of this Report.....	7
2. Method.....	8
2.1 Two Methodical Approaches.....	8
2.1.1 Analysis of the Projects, their Offers, and their Integration in the Institutions.....	8
2.1.2 Analysis of the Usage of the Project Offers by Students.....	8
2.2 Main Themes for the Project Visits.....	9
2.3 Main Themes for the Student Survey.....	10
3. Most Important Formal Results.....	11
3.1 Results from the Project Visits.....	11
3.1.1 Quantitative Aspects.....	11
3.1.2 Qualitative Aspects.....	13
3.1.3 Technical Aspects.....	14
3.1.4 Project Management.....	14
3.2 Results from the Student Survey.....	15
3.2.1 Quality: Statistical Analysis of Selected Themes.....	19
3.2.2 Analysis of the Qualitative Statements from the Students.....	21
4. Conclusions.....	22
4.1 General Conclusions on the Status of the Program Swiss Virtual Campus.....	22
4.1.1 Development of Internet-Based Course Modules Supported by the Involved Institutes.....	22
4.1.2 High-Quality Web-Based Courses that can be Used Independently of Time and Place.....	23
4.1.3 Use of New Information and Communication Technologies, Sustainability.....	24
4.1.4 Improvement of the Quality of Learning Processes by Including Interactive Teaching.....	25
4.1.5 Clear Pedagogical Goals.....	26
4.1.6 Collaboration within Switzerland's Higher Education System.....	27
4.1.7 Mutual Certification of Qualification.....	28
4.2 Conclusions from the Project Visits.....	28
4.2.1 Planning, Conception.....	28

4.2.2 Design, Development	29
4.2.3 Implementation, Usage, Running	29
4.2.4 Quality Assurance	29
4.2.5 Inter-University Cooperation.....	30
4.3 Conclusions from the Student Survey	30
5. Recommendations.....	32
5.1 Target Groups	32
5.1.1 SVC Steering Committee	32
5.1.2 Directions of Institutions of Higher Education	34
5.1.3 Projects.....	37
5.1.4 Competence Centres.....	37
5.1.5 General Target Group: Persons Interested in E-Learning	38
5.2 Phases and Themes.....	40
5.2.1 Planning, Conception	40
5.2.2 Design, Development	40
5.2.3 Implementation, Usage, Running	40
5.2.4 Quality Assurance	40
5.2.5 Inter-University Cooperation.....	41
5.3 Original Goals of the Program.....	41
5.3.1 Development of Internet-Based Course Modules Supported by the Involved Institutes.....	41
5.3.2 High-quality Web-Based Courses that can be Used Independently of Time and Place.....	44
5.3.3 Use of New Information and Communication Technologies, Sustainability.....	44
5.3.4 Improvement of the Quality of Learning Processes by Including Interactive Teaching	45
5.3.5 Clear Pedagogical Goals.....	45
5.3.6 Collaboration within Switzerland's Higher Education System	45
5.3.7 Mutual Certification of Qualification.....	46
6. Final Statement	48
Bibliography	50
General Remark	50
Part 1: Literature of Reference for the Report on the Results of the Project Interviews	50
Part 2: Literature of Reference for the Student Survey	51
Appreciation.....	53

Attachments to the Status Report 2004: List of Documents 54
List of the Documents Delivered for the Status Report 2004 54
List of Complementary Documents on the Status of the SVC in 2003/2004 54

1. Introduction

1.1 Starting Point

Swiss Virtual Campus (SVC) is a Federal Program for promoting new information and communication technologies at university level (www.swissvirtualcampus.ch). The goals of the Swiss Virtual Campus Impulse Program have originally been summarized as follows in the official flyer of the Swiss University Conference (SUC) for the Impulse Program 2000–2003:

“The main goal of the Swiss Virtual Campus is the development of Internet-based course modules supported by the institutes of higher education involved. Students are offered the possibility to participate in high-quality web-based courses that can be used independently of time and place.

The SVC projects

- Encourage the use of new information and communication technologies;
- Improve the quality of learning processes by including interactive teaching;
- Have a clear pedagogical goal;
- Promote collaboration within Switzerland’s higher education system;
- Support a mutual certification of qualification.”

All Swiss Universities, several Universities of Applied Sciences, EPFL in Lausanne and the Swiss Federal Institute for Forest, Snow and Landscape Research WSL in Davos became Leading House of at least one SVC project in the Impulse Program.

In the meantime the program has been focused differently for universities and universities of applied sciences:

- For universities the focus is on the integration of the courses into the regular curricula of the participating universities.
- For universities of applied sciences the focus may also be on continuing education, online course development practice, or organization in general.

In August 2005, the Impulse Program is summarized as follows on www.swissvirtualcampus.ch :

„The objective of the Impulse Program was to establish and promote expertise in the development and use of Internet-based interactive online learning units at institutions of higher education in Switzerland. Government funding (30 million francs for universities, approximately 2 million francs for Federal Institutes of Technology and some 9 million francs for universities of applied sciences) and contributions from the institutions themselves were available to support the 50 projects approved in 2000-2003. The Impulse Programme was divided into an initial phase with 27 projects and a second phase with 23 projects.

Overall responsibility rested with the Swiss University Conference (SUC), and a Steering Committee of eight experts was responsible for achieving the following goals:

- Three or more faculty members of different institutions jointly develop and offer online course modules through their institutions. Students at each of the participating institutions can obtain credit points with these modules.
- The online modules must reach the largest possible number of targeted students, follow clear pedagogical goals, be eligible for inclusion in the European Credit Transfer System (ECTS), use current formulation approaches and tools, and support multilingualism where appropriate.
- Online course modules developed by universities of applied sciences can focus on aspects of continuing education as well as online course development practice, or on organization in general.”

This summary is followed by some remarks concerning the success of the program:

“Program evaluation:

- The Swiss Virtual Campus (SVC) project has been well received in academia.
- Good press both inside and outside educational establishments.
- Teachers are more aware of the potential of online education.
- Communication between project partners is much better than expected.
- Various institutions of higher education are willing to work together.
- Occasionally there are difficulties in reaching agreement on content and content structure.
- The professionalism of some ad-hoc development teams could be improved.
- Recruitment of qualified personnel is a serious problem.
- Implementation costs seem rather high.
- There is a general lack of an online education culture.”

The evaluation mandate of the SVC Impulse Program was directed by Prof. Dr. K. Weber, Coordination Office Continued Education, University of Berne. At the SVC Days 2004 the results of the evaluation mandate were presented. The text of this presentation is available on www.swissvirtualcampus.ch, and the final report of the program evaluation is available on www.cus.ch (cf. reference 1a). In the presentation, the focus of this evaluation is described as follows:

„This summative programme evaluation had a clear focus on the programme as a whole - meaning that the 50 projects and their development were not the primary object of the evaluation - and was aimed at analyzing the implementation processes, the output or products of the programme as well as its (potential) impacts.“

The presentation lists the following two strengths of the program:

- “The SVC has been effective as an impulse programme, that has put the issue of ICT in higher education definitely on the agendas of policymakers, of people and institutions in higher education.

- Second, it has yielded a considerable amount of completed and at least partially implemented e-learning components in a wide range of fields of study. These new eLearning solutions will continue to evolve, to be used and integrated and will show their real usefulness and merit only in the future.”

Although the evaluation mandate team didn't visit the projects personally, it says about their results:

- „[...] considering that about 33 millions of federal funds and some 47 millions in matching funds were invested, the actual “outputs” of the programme (in terms of e-learning products) and their implementation and integration so far may seem somewhat disappointing. Even though there is no solid benchmark that would help to assess the actual cost of high quality e-learning programmes in higher education, thus making it difficult to judge the SVC project costs precisely, project costs do seem high.”

The present report, “SVC Status Report 2004” from the mandate “SVC Status Reports and Project Monitoring”, is not focusing on evaluation, but on reporting and monitoring, and concerns exclusively the projects of the Impulse Program. In the project interviews and the student survey, the project teams and their students provided information in order to complete what was available in written form to the team of the program evaluation. The results of the program evaluation concerning the products may appear differently in the light of the present report.

1.2 Mandate

This report on the projects of the Impulse Program 2000–2003 has been written in the framework of the mandate „SVC Status Reports and Project Monitoring“, which is part of the Consolidation Program 2004–2007. The mandate reports on the effects of the measures financed by the federal program SVC on behalf of the SVC Steering Committee. The team had to analyze the present status and to suggest future measures, based on qualitative and quantitative research. The general scope of the mandate is defined as follows:

„The general scope of the present mandate is to first provide a complete documentation of the SVC Impulse Program that will serve as a base to develop strategy for monitoring the development of all SVC projects, particularly in the domains of effectiveness and virtual mobility. The mandate will focus on courseware transfer and usage in the field, with special focus on interlingual and intercultural cooperation/communication. It will investigate on the educational gains achieved.“

(http://www.paed.unizh.ch/projekte/svcmonitoring/mandate_svc_monitoring_e.pdf)

The report focuses particularly on project results, effectiveness and educational gains, as well as on courseware transfer and usage in the field.

The mandate team is composed as follows:

- Strategic direction: Prof. Dr. Jürgen Oelkers, Universität Zürich, Director of the Institute of Pedagogy; Department of General Pedagogy;
- Project visits, interviews: Dr. Cornelia Rizek-Pfister;

- Student questionnaire: Dr. Damian Miller.

Intense discussions took place with 49 out of 50 project leaders or coordinators between July 04 and January 05. Most of the visits to the SVC projects of the Impulse Program took place from September until December 2004. The student questionnaire was online from January 11 until September 30, 05, for a survey on all parts of Switzerland concerning the students' acceptance of the virtual offers of the SVC courses.

1.3 Aims of this Report

The "SVC Status Report 2004" documents the results of the SVC Impulse Program 2000-2003. It focuses on the projects, investigating on the current status and on future trends for the newly developed SVC learning environments, on the effects of the SVC support mandates, and on the opinion of the students of the SVC courses concerning their learning processes and their own educational gains.

The present document summarizes the consolidated results of this "SVC Status Report 2004". It first gives an introduction into the goals of the program and into the evaluations and reports to date. Chapter 2 describes the two methodical approaches of the mandate "SVC Status Reports and Project Monitoring": analysis of the projects, their offers, and their integration in the institutions; and analysis of the usage of the project offers by students – providing lists of the main themes for the project visits and for the student survey. Chapter 3 contains the presentation of the most important formal results from the project visits and from the student survey.

Chapter 4 offers general conclusions on the status of the program Swiss Virtual Campus, structured according to the original goals of the program. The following specific conclusions from the project visits are structured according to important phases and themes of project development: planning and conception; design and development; implementation, usage, and running; quality assurance; inter-university cooperation. The chapter is closed by conclusions from the student survey.

Chapter 5 tries to give some recommendations, structured according to target groups, to important phases and themes of project development and to the original goals of the program (similar to chapter 4). Specific recommendations are given for the following target groups: SVC Steering Committee, directions of institutions of higher education, projects, competence centres, and a general target group of persons interested in e-learning.

After a short final statement and the literature of reference, a list of the attachments to this document gives an overview over the documents delivered for the "Status Report 2004" and over complementary documents on the status of the SVC in 2003/2004.

2. Method

2.1 Two Methodical Approaches

The report is based on qualitative and quantitative research. The qualitative research part concerns the analysis of the projects, their offers, and their integration in the institutions. The quantitative research part concerns the analysis of the usage of the project offers by students.

Dr. Cornelia Rizek-Pfister was responsible for the qualitative research part, for document analysis and interviews, whereas Dr. Damian Miller was responsible for the quantitative research part, for the student survey.

2.1.1 Analysis of the Projects, their Offers, and their Integration in the Institutions

The basic information for the data collection during the project visits was taken from the following sources:

- **Title, partner, project description:** www.swissvirtualcampus.ch; annual reportings and final reports as well as applications for maintenance if available.
- **Acknowledgment of the achievements, additional data:** notes of the project visits in autumn and winter 04/05.
- **List of criteria for additional data, on participants, technology, products etc.:** E-Site Visits 2002; survey by the SVC coordination 2003, documents of the SVC mandates eQuality and IntersTICES.

The participants in the discussions received a draft version of the notes in advance in order to prepare additions and corrections. Usually the following persons participated in the project interviews: project leader, project coordinator, local SVC coordinator of the Leading House, and C. Rizek-Pfister, mandate „SVC Monitoring“. Nearly all projects were represented by the project leader him- or herself and additionally by the project coordinator, very often also by other important collaborators. The competence, service and production centre was often represented by the person who was responsible for the project internally, in some cases also by the director of the centre.

2.1.2 Analysis of the Usage of the Project Offers by Students

The project leaders of the Impulse Program were asked to let their students fill in an online questionnaire. It was offered in German, French and Italian. The projects often included it directly into their websites.

The validity of the questionnaire was assessed by 39 students in pilot groups. The degree of affirmation was: “strongly agree” and “agree”. Values: linguistic comprehensibility 84%, content comprehensibility 74%, ease of answering 71%, unambiguousness of questions 79%.

2.2 Main Themes for the Project Visits

The basic data collected cover between 10 and 30 pages per project. They were analysed for the comprehensive report on the project interviews. Their thematic structure is the following:

- **General project data:** project number, title, leader, contact data; official partners; project description; acknowledgment of the achievements.
- **Quantitative aspects:** information on project duration and on financing by the SVC; number of man-years invested; quantitative data on the usage by students; integration in the curricula; products.
- **Qualitative aspects:** pedagogical consulting and the support of project collaborators, coaching of the students, social contacts, the relation between face-to-face and distance learning, evaluation and quality assurance.
- **Technical aspects:** technical consulting and support, infrastructure, platforms, tools, student administration, and the use of standards. Software developed in the framework of the project and the further use of own software developments were discussed.
- **Project management:** project organization, legal advice, cooperation among partners; cooperation with other SVC projects.
- **Future perspectives:** plans for the further use of the new learning environment; synergies, cooperations, spin off activities; new users of the learning environment; courseware transfer and usage in the field; sharing what has been produced; continuing education; „mise à niveau“; high-school; real and virtual mobility; efficiency and effectiveness; cooperation with other institutions; AAI (Authentication and Authorization Infrastructure, from SWITCH) and other inter-institutional infrastructure; Bologna reform; foreign students; alumni etc. The project teams were asked about their priorities.
- **Further data:** partners and collaborators of the projects of the Impulse Program in the years 2000-2004; tables of content of the projects from the year 2004; publications from projects in the years 2000-2004.

Note on the quantitative aspects of products: The project teams were asked to give the following information on the extent of the modules:

- How many working hours should the students spend for all modules developed in the framework of the SVC, according to the planning? Or, in other words: How long would a student take if he worked through all material with a thorough and efficient attitude, rapidly but not leaving out anything?
- How much of it is working through online material in front of the screen (distance learning or self-directed study)?
- For how many hours can online content be read and worked through in self-directed study?
- For how many hours can a student make demanding interactive exercises?

- How many ECTS points could be given theoretically for working through all online material?

In addition the project teams were asked which were the percentages of time needed to work through all online material, distributed on types of learning objectives according to Bloom's taxonomy:

- Knowledge: what can be learned by heart;
- Understanding: understanding connections;
- Application: exercises, testing it in different situations;
- Analysis: students structure a problem into partial problems;
- Synthesis: students solve a problem;
- Evaluation: students evaluate if one solution or the other fits better.
(cf. bibliography part 1, reference 2a: Bloom, Mesia, Krathwohl, 1964).

The project teams were also asked which were the percentages of time needed to work through all online material, distributed on types of learning resources and media.

A visualization of this information can be found for each project in the project documentation of the Status Report 04 (cf. attachment 2).

Note on further data: The names of the collaborators, the themes of the SVC material and the publications of the projects are listed separately in the end of attachment 2.

2.3 Main Themes for the Student Survey

Main themes for the student survey are the following:

- **Demography:** native language; semester; age; institution type;
- **Using the virtual offerings:** learning modules; download; exercises; collaboration; discussion forum; course e-mail; private e-mail;
- **General quality estimation:** learning goals; students achieve learning goals; applicability for achieving learning goals; orientation; code of practice; supporting learning processes; embedding in the curriculum; preference of offerings like this; recommendation on other students;
- **Support with problems or troubles:** time and support; professors; mentor; students; help from the system (z. B. FAQ); absent help.

3. Most Important Formal Results

3.1 Results from the Project Visits

All 50 SVC projects of the Impulse Program were contacted between September and December 2004; intense discussions took place with 49 of the project teams. They were still active and willing to give exhaustive information in the interviews of the mandate “SVC Status Reports and Project Monitoring”.

The drop out rate of only one project among 50 is minimal (project 991019-e-Ducation, a project of universities of applied sciences whose leader and only lecturer had left the university for industry). The e-learning support centre of the Leading House (Berner Fachhochschule) tries to bring even the results of this project to a re-usage, although the Leading House no longer offers this type of education.

Cooperation was very good, also for optional requests:

- One quarter of the project teams readily fulfilled the wish to meet students in order to discuss their experiences with them and to get feedback on the draft version of the student questionnaire.
- 48 project teams reacted promptly and positively on the first e-mail with the request of a project visit, 2 project leaders answered equally positively on the second request.
- 48 projects were finished definitely in September 04, some since nearly 2 years, and not all of them had applied for maintenance. Their answer was not less constructive and willing, too.

The following structural data are particularly interesting in order to present the dimensions and the development of the SVC projects of the Impulse Phase.

The results presented below summarize the extensive report by Cornelia Rizek-Pfister: “Swiss Virtual Campus Status Report 2004, Results of the Project Interviews, Impulse Program 2000–2003” (cf. attachment 2; available in English and German). The same keywords are used to structure the data in this summary, in the extensive report and in the individual project documentations.

3.1.1 Quantitative Aspects

Number of collaborators more than 1000 participants	Approx. 1020 names of persons having worked for the SVC were indicated up to now (the data from one project are missing).
Person-years invested: average: approx. 12 person-years per project; approx. 2/5 financed by the SVC	Totally at least approx. 600 person-years were invested into SVC projects. Before the start of the projects approx. 44 person-years were already invested into the themes of the projects; the SVC financed at least approx. 253 person-years (from one project the data are missing).
Start of Test Phase since 2000, mainly 2002	4 projects: 2000; 9 projects: 2001; 23 projects: 2002; the others later.

<p>Start of Regular Courses since 2001, mainly 2003</p>	<p>4 projects: 2001; 8 projects: 2002; 21 projects: 2003; the others later.</p>
<p>Number of Students in 2004 approx. 4/5 from cantonal universities; approx. 1/10 from the ETH domain; approx. 1/8 from UAS</p>	<p>approx. 9'800 students at cantonal Universities (from 35 projects); approx. 1'300 students at the ETHZ / EPFL (from 9 projects); approx. 1'400 students at Universities of Applied Sciences (from 14 projects); totally approx. 12'500 SVC students at Swiss Institutions of Higher Education; but this number is hardly reached every semester. 33 project teams indicate to have regularly more than 100 students. 27 of these projects started with regular courses in 2003 or before.</p>
<p>Projects without Regular Students approx. 6 (depending on the criteria)</p>	<p>991054-Forum New Learning has become a support mandate. 991019-e-Ducation has been abandoned after the project leader had left the university. 200108-TropEduWeb offers open access and is widely used.</p> <p>In January 2005 at least 3 other projects had not yet finished their implementation process and were still developed. The SVC Steering Committee was discussing on their support; it decided to stop financing one of them.</p>
<p>Percentage of Self Study or Distance Learning 1/4 for each group: 1. below or near 50%; 2. between 50% and 80%; 3. 80% or more; 4. depends on the course</p>	<p>2 projects: below 20% ; 6 projects: between 20% and 50%; 4 projects: near 50%; 12 projects: between 50% and 80%; 12 projects: 80% or more. 29 projects could offer more than 80% of distance learning if they wanted it. 11 projects vary from one extreme to the other, according to the course.</p>
<p>The SVC helps to make educational offers comparable 1/4 agree enthusiastically</p>	<p>12 project teams agreed enthusiastically with this point. With 4 projects this didn't happen (yet). One project team mentions this point as a particular difficulty.</p> <p>Comparable offers are vital for the Bologna Reform. They will probably have a huge influence on the mobility of students.</p>
<p>ECTS Points, Certificates, Exams Approx. 1/3: more than 8 points; Approx. 1/4: between 4 and 8 points;</p>	<p>15 projects offer courses summing up for more than 8 ECTS credit points (= approx. 240 working hours of students). 12 projects: between 4 and 8 credit points; 9 projects: between 1 and 4 credit points. 9 projects are not implemented or the number of credit points is</p>

<p>Approx. 1/5: between 1 and 4 points.</p> <p>Approx. 3/10 of all projects have changed the exams and have therefore truly obligatory online parts.</p>	<p>still open.</p> <p>2 projects belong to the category “Educational Support”; therefore they do not offer any courses for regular students.</p> <p>5 projects indicated the credit points for the virtual offers separately. In 14 projects the use of the online learning environment is obligatory. The other projects do the exams as before. The use of the SVC material cannot be truly obligatory there.</p> <p>(Basis: 47 projects)</p>
--	---

3.1.2 Qualitative Aspects

<p>Contributions from Students to the Project</p>	<p>10 projects have integrated contributions from students into the project material.</p>
<p>Languages</p> <p>approx. 1/10: in G F E 2/5: no translations 1/10: div. languages to E 1/10: translations only into national languages</p>	<p>4 projects: all in German, French and English; 10 projects: several languages without translations.</p> <p>5 projects: parts in another language; 5 projects: German or French or Italian, with English;</p> <p>3 projects: G F; 2 projects: G F I;</p> <p>7 projects: only E; 2 projects: only F; 6 projects: only G.</p>
<p>Access to the Websites</p>	<p>9 projects have open access.</p>
<p>Pedagogical Consulting and Support</p> <p>approx. 1/5: individually organised pedagogical support</p>	<p>At least 15 projects had a pedagogue as a partner or as a team member. At least 4 projects engaged external experts (e.g. independent consultants) for external evaluation and consulting. Many projects mentioned the support centres of the institutions. 8 projects mentioned explicitly to have had positive experiences with IntersTICES, 11 projects with eQuality.</p>
<p>Design Rules for the Material</p> <p>approx. 1/5 had a clearly defined concept</p>	<p>15 projects indicated to have developed exact guidelines for the design of the material. For 3 projects this wasn't relevant because design was done independently by one single person.</p>
<p>Workload of Lecturers and Tutors</p> <p>1/10: massively bigger approx. 1/5: not bigger</p>	<p>9 projects: after the end of the project development not bigger than before. 5 projects: massively bigger; 2 projects: slightly bigger, but the load is lightened for the face-to-face lessons: less preparation is needed; less stress during the lessons; not everything must be mentioned.</p>

Evaluation of Teaching by the Institutions institutional evaluation of teaching is not yet dominant	4 projects reported on evaluations of teaching by the institution in intervals of 3 semesters to several years. 6 projects indicated to be supported in their student enquiries by the institutional office for the evaluation of teaching or by another support office of the institution. 14 projects indicated to evaluate their courses every time.
Student Questionnaires regularly in regular courses	All projects did at least tests with single students. 35 projects indicated to have done student enquiries in regular courses.
Contributions to the Project from Students	10 projects have integrated contributions from students into project material.

3.1.3 Technical Aspects

Technical consulting and support more than 1/2 individual	8 projects indicated Edutech as an important consultant and support. 9 projects referred to support structures of their institution. 7 projects didn't need technical support because of their own competencies. 11 projects indicated to have profited from the SVC mandate Edutech (http://www.edutech.ch).
National Content Server approx. 1/5 interested	991053-SWISSLING and 200113 Information Theory (courses in Lausanne) have migrated to WebCT Vista. Others are testing. 7 projects would explicitly like to migrate to a National Content Server, but only with adequate support and long term perspectives.
Authentication and Authorization Infrastructure (AAI) approx. 1/5 interested	More than 10 projects are already in the AAI of SWITCH or are very interested in. For the Learning Management Systems (LMS) WebCT Vista, WebCT Campus Edition, and OLAT the necessary software is ready. For Moodle it was not yet finished in March05. (Mailing list aai-announce@switch.ch , July 6, 2005: Moodle and ILIAS are AAI-enabled.)
Standards approx. 1/10 active users	6 projects use e-learning standards like SCORM and / or QTI (IMS).
Software Development	19 projects have developed software.

3.1.4 Project Management

Project organization	8 projects distributed the production and the technical
-----------------------------	---

large variety of types; no direct correlation with success too many partners: not decisive for success	implementation of the content on the partners and re-assembled only the finished content. 10 projects produced centrally and gave guidelines to the partners for the design of content. Despite complaints about too many partners, even heavy structures could lead to good results.
Cooperation among Partners approx. 1/2: worked well approx. 1/6: problematic	24 projects said that the cooperation worked well. 4 projects indicated that they had a lot of additional work through it, and they would make sure to have a smaller team in the future. 5 projects will be continued in the future by the Leading House without official partners. (The others didn't explicitly state that it was without problems)

3.2 Results from the Student Survey

The results presented below summarize the extensive report by Damian Miller: "Projektübergreifendes Monitoring Swiss Virtual Campus, Quantitativer Teil" (cf. attachment 3). The column "source" indicates the corresponding chapter of this extensive report.

Topic	Source	Description, interpretation (n=690)
4. Demography		
Native language	4.2	65% German, 22% French, 7% Italian, 0.4% Rätoromanisch, 0.8% English, 5% other native language
Semester	4.3	More than 30% of the users are in the first semester. 5% use the SVC offering in further education or postgraduate studies.
		Recommendation: Check if the virtual offerings can be used more in further education or in postgraduate studies.
Age	4.4	86% are between 18 and 27 years old.
Days: Workday	4.5	76% use the virtual learning offering on workday.
Days: Weekend	4.6	42% use the virtual learning offering on weekend and public holidays.
Days: Holydays	4.7	35% use the virtual learning offering on holidays.
Type of higher education institution	4.8	71% of the students are studying at a university. 15% at UAS, 14% at ETHZ/EPFL.
Sex	4.9	47% female, 53% male.

Learning aptitude	4.10	---
Location	4.11	30% at home, 23% at the university
Duration	4.12	48.5% use the virtual learning offering approximately 1 to 2, mean 2.7 and standard deviation 1.7

Topic	Source	Description, interpretation (n=690)
5. Use of the virtual offerings		
Learning modules	5.1	65% of the students use the learning offering for learning with modules or learning units, that is, for the purpose of learning content. 20% use the modules only to a certain extent.
Download	5.2	44% use the offering for the purpose of obtaining learning material. 55% use this possibility only partly, almost never or not at all.
Exercises	5.3	73% use exercises and/or tasks, 16% use these at times, 9% almost never or not at all.
		Recommendation: The development of exercises, tasks or self assessment applications will have high priority.
Collaboration	5.4	12% use the virtual offerings for collaboration and 15% only partly.
Discussion-Forum	5.5	11% use forums regularly, 75% use them sometimes or not at all.
		Recommendation: Discussion forums are very appropriate instruments for analysing a discussion.
Course e-Mail	5.6	11% use the course e-mail, 12% use the course e-mail at times and 75% use it almost never.
Private e-Mail	5.7	30% use the private e-mail often, 12% use the private e-mail at times and 37% use it almost never.

Topic	Source	Description, interpretation (n=690)
6. General quality estimation		
Learning goals	6.1	72% consider the learning goals to be stated clearly. 18% are indecisive or consider the learning goals as unclear.
		Recommendation: In order to ensure quality and transparency and to support student mobility in accordance with the Bologna

		agreements it is absolutely crucial to define binding learning goals.
Achievement of learning goals	6.2	59% estimate that they achieve the learning goals (subjective) 34% estimate the item negatively or indecisively.
		Recommendation: The learning offerings should be planned and developed so that the students can easily recognize their learning processes and success. When planning it is particularly important to allow for the fact that elaborate and sophisticated applications for self-assessment can be very expensive.
Suitability for learning goals achievement	6.3	60% consider the learning offering as appropriate to achieve the declared learning goals. 35% are undecided or disagree.
		Recommendation: The project management has to ensure the consistency of the content and of the instructional (didactical) design when planning, developing and remaking the learning resources.
Orientation	6.4	71% are able to orient themselves in the online learning offering without problems. 27% are undecided or disagree.
		Recommendation: When planning and developing virtual learning offerings, intuitive orientation is absolutely imperative.
Code of practice	6.5	72 % understand quickly how to learn with the virtual learning offering. 26% rate the item negatively or are undecided.
		Recommendation: The virtual learning offerings have to be designed so clearly that the students don't need other instructions.
Supporting of learning processes	6.6	63% of the students estimate that their learning processes are supported by the virtual learning offering. 36 % rate the item negatively or are undecided.
Integration into curriculum	6.7	51% believe that the virtual learning offering is optimally coordinated with the other learning offerings. 44% rate the item negatively or are undecided, which means that the virtual learning offering is not sufficiently integrated in the curriculum.
		Recommendation: When planning, conceptualizing, developing and implementing the virtual learning offering, care must be taken that it is optimally networked with the other learning offerings. We recommend designing a complete teaching/learning arrangement and communicating this arrangement graphically to the students as

		the basis of a syllabus.
Preference of online offering	6.8	56% enjoy learning with such learning offerings. 43% rate the item negatively or are undecided.
Recommendation to others students	6.9	63% of the students recommend this learning offering to others. 35% rate the item negatively or are undecided.

Topic	Source	Description, interpretation (n=690)
7. Support		
Note: 151 (22%) students (out of 690) provided no answer to this item. That could mean that they don't need any special support; respectively, it can be a sign for a good quality of the virtual learning offerings.		
Time and support	7.1	56% obtained support in an adequate time. 32% rate the item negatively or are undecided.
Professors	7.2	48% ask the professor for help regularly. 12% ask the professor for help according to the circumstances.
Mentors	7.3	42% ask the mentors for help. 36% rate the item negatively or are undecided.
Students	7.4	62% ask for help from other students. 26% rate the item negatively or are undecided.
Help from the system (e.g. FAQ)	7.5	57% consider that the system provides sufficient help and support. 20% rate the item negatively or are undecided.
		Recommendation: In order to relieve the responsible professors and mentors, support offered by the system must be improved.
Missing help	7.6	62% obtained help and support when needed. 5% made the experience, that there is no help provided.

Topic	Source	Description, interpretation (n=690)
8. Cooperation... Remark: 144 (21%) out of 690 didn't answer to the items covering this topic. This fact could lead to the interpretation: no web based cooperative activities provided for those students.		
... at the same university	8.1	46% students cooperate with students from the same university. 33% don't have cooperation with students from the same university.

... with other university	8.2	73% don't cooperate with students from others universities. 5% cooperate with students from an other university.
...in pairs	8.3	34% cooperate in pairs using the virtual learning offering. 45% don't cooperate in pairs.
... in groups	8.4	30% cooperate as group using the virtual learning offering.

Topic	Source	Description, interpretation (n=690)
9. Communication language		
Communication in mother tongue	9.1	60% of students communicate in their mother tongue, when using the virtual learning offering.
German	9.2	46% communicate in German.
French	9.3	24% communicate in French.
Italian	9.4	7% communicate in Italian.
Rätoromanisch	9.5	0.3% communicate in Rätoromanisch.
English	9.6	11% communicate in English.
Other Language	9.7	..2% communicate in other languages.

Topic	Source	Description, interpretation, recommendations (n=690)
10. Validity	10	n=39
Validity	10.1 10.2 10.3 10.4	The validity of the online-questionnaire was assessed by 39 students in pilot groups. The degree of affirmation was: "strongly agree" and "agree". Values: linguistic comprehensibility 84%, content comprehensibility 74%, ease of answering 71%, unambiguousness of questions 79%.

3.2.1 Quality: Statistical Analysis of Selected Themes

The following five correlations (ranging from medium to strong) were identified. They are the combinations of items 5, 9, 15, 16 and 17.

No.: see appendix 11 of the extensive report by Damian Miller (LO: Learning Offering)

Correlations	Description, interpretation
5 supporting learning processes/ Applicability for achieving learning goals: $r = .641^{(**)}$	A medium to high correlation exists if the students make the experience that the virtual learning offering supports their learning processes, and if the students make the estimation that the learning offering is applicable to achieve the learning goals.
9 code of practice / orient-teering: $r = .721^{(**)}$	A medium to high correlation exists between the instruction (code of practice) how the students learn with the virtual learning offering and the orientation in the virtual learning offering.
15 supporting learning processes / Preference of offer-ings like this LO: $r = .660^{(**)}$	A medium to high correlation exists between the students' experience that the virtual learning offering supports the learning processes and the need to learn with such learning offerings.
16 supporting learning processes / Recommendation on other students: $r = .690^{(**)}$	A medium to high correlation exists between the students' experience that the virtual learning offering supports the learning processes and the affection to recommend the virtual learning offering to other students.
17 Preference of offerings like this / Recommendation on other students: $r = .780^{(**)}$	A medium to high correlation exists between the need to use virtual learning offerings like this and the affection to recommend the learning offering to other students.
Support/ Quality Source: 11.3.2	The correlation matrix „Support (help) and Quality“ shows that the dependence between support function and estimation of quality is very small.
Recommendation	Tools for learning activities and self-assessment with a high usability have to be integrated into virtual learning offerings.

3.2.2 Analysis of the Qualitative Statements from the Students

Annotation: The number of qualitative statements varies a lot. In general very few statements were made. That's why the expressiveness of the statements is very low, but not negligible.

Theme	Source	Interpretation
Accessibility	12.2	The students who use the SVC virtual learning offering report about sufficient access to the learning resources. The standard ICT-equipment is needed to use the virtual learning offering efficiently.
Applicability for learning goals achievement	12.3	Regarding the very small number of students, who write a statement about the applicability of the learning offering to achieve the learning goals, is it possible to say, that the virtual learning offerings are applicable to achieve the learning goals.
General quality estimation	12.4	The students are in general satisfied with the quality of the virtual learning offerings.
Acceptance	12.5	The small number of statements on learning with virtual learning offerings could mean that students are open and do accept the implementation of eLearning.
Learning events	12.6	The learning offerings are used differently: They are part of face-to-face classes (e.g. lectures, seminars) or preparation for exams. The SVC virtual learning offerings have the potential to support the individual mode of learning.
Learning processes	12.7	---
Cooperation	12.8	---
Whishes	12.9	The heterogeneity of the statements doesn't allow the identification of coherent clusters of needs. That could mean that the students don't detect a consistent deficit of the Swiss Virtual Campus projects.

4. Conclusions

4.1 General Conclusions on the Status of the Program Swiss Virtual Campus

Very generally it can be said that the potential of the new media as well as of the cooperation among institutions was mostly translated into practice. The quality, the reputation and the competitiveness of the learning offers in the national or international competition are in the focus of the project teams. They would like to work professionally and to have the possibility to rely on professional support. The consolidation of the support structures corresponds to this wish.

The supposed advantages of local and temporal flexibility are confirmed, together with enhanced quality and reliability of teaching and learning material and better coaching.

The goals of the Swiss Virtual Campus Impulse Program have been summarized as follows, according to the official flyer of the Swiss University Conference (SUC) for the Impulse Program 2000–2003:

“The main goal of the Swiss Virtual Campus is the development of Internet-based course modules supported by the institutes of higher education involved. Students are offered the possibility to participate in high-quality web-based courses that can be used independently of time and place.

The SVC projects

- Encourage the use of new information and communication technologies;
- Improve the quality of learning processes by including interactive teaching;
- Have a clear pedagogical goal;
- Promote collaboration within Switzerland’s higher education system;
- Support a mutual certification of qualification.”

Using this definition, already cited in the introduction, as a framework for these conclusions, the general status of the program Swiss Virtual Campus has been the following in 2004:

4.1.1 Development of Internet-Based Course Modules Supported by the Involved Institutes

The advantage of a profound, pedagogically sound preparation with the aim of a later **reuse** seems to be easier **acceptable with online material** than with other media. Maybe the effort for the creation of online material is so evidently too high for one single use, that the proud teacher’s rule of always preparing anew, and **not teaching “out of the drawer”**, has been at least partially outruled. Through the extended feedback cycles and the continuous revisions enumerated in the annual reports this rule re-enters the scene, but at least not to the same extent.

The benefits of the institutions are manifold: **New learning offers become possible, existing offers are enhanced, new cooperations with other institutions are started, also internationally, the (potentially) enhanced visibility of the new teaching can be used for PR issues** etc.

The concrete potential for institutional **economies** seems still **minimal**. There is a large consensus that the benefits are not in the financial aspects – also **as a principle, because the quality, the**

seriousness and the competitiveness of the learning offers are in the focus of the project teams. Strategies for implementation vary though according to the framework conditions, especially when comparing Universities of Applied Sciences, cantonal Universities and Federal Institutes of Technology (ETHZ, EPFL).

The commitment of the institutions for SVC projects is generally high. In some cases the own funds for a project are much higher than the SVC funding. The principle of “matching funds” (for one franc of the confederation one franc of the institution) made sure that the projects were always largely in the responsibility not only of the confederation, but also of the institutions. Thus the projects were **no foreign bodies**. The difficulties with which projects were confronted **contributed to the creation of measures for securing the investments**, e.g. the creation of **support structures at the institutions**.

Most projects have successfully created Internet-based course modules supported and used by the involved institutes. Special cases of projects with particular frameworks or without courses are the following:

- The partners of 991035-Hybrid Classroom conducted and conduct different postgraduate studies on Cryptology, telecommunication networks and automatization technique since the year 2000.
- 991026-POLE started in autumn 2000 as a junior partner in the Stanfords AEC project (teams of an Architect, an Engineer and a Construction Manager) and conducted their first own course in February 2001. Others followed regularly; 2 to 3 courses per year.
- The projects 991041-Eduswiss Online and 991054-Forum New Learning support lecturers.
- The projects 200108-TropEduWeb, 200150-Basic and Clinical Pharmacology, 991024-Computers for Health, 200154-Virtual Skills Lab und 991019-e-Ducation had no regular courses during the Winter Semester 2004 / 2005.
- 200154-Virtual Skills Lab shall be used in the Winter Semester 2005/06 for the first time.
- 991048-eBioMed was tested, but it isn't used yet in the Leading House. Parts of the content are used for teaching by a partner.

4.1.2 High-Quality Web-Based Courses that can be Used Independently of Time and Place

The following projects received particular attention in international competitions:

- 200156-pharmasquare: winner Medida-Prix 2003 ;
- 991051-artcampus: finalist Medida-Prix 2003 ;
- 200155-FE-Transfer: winner EASA award 2004;
- 991017-DOIT: finalist EASA award 2004, finalist Medida-Prix 2005;
- 991021-eCF: reference for good practice on www.e-teaching.org in 2005;

- 991009-Latinum Electronicum: virtual gold medal; best online course at the eLearning Conference 2006 in Hamburg.

The relation between face-to-face teaching and self study is reflected critically, but **no SVC project leader would reduce or even abandon the use of new media in teaching**. Everybody agrees, also at specialised institutions offering only distance learning, that meetings – at least from time to time - are useful for the learning process. And yet, **blended learning** (here understood as a mix of face-to-face and distance learning) can mean very different things, depending on if it is offered by a traditional campus university or by a distance learning institution. The percentage of common study time in the classroom or in the lecture hall compared with the part of self-study, independent of time and place, can vary a lot.

The question is not “blended learning yes or no?” but rather: “**Which blended learning?**” In this context it has to be considered that good videoconferencing systems allow situations of “synchronous e-learning” that are very near to real meetings and that are just as effective – but of course certainly not better than real meetings with breaks. Especially the dynamics of **breaks**, the **networking**, that is often highlighted as particularly important, seems to presuppose personal, real meetings. Maybe there will be a time when this can be done electronically at a distance.

The type of tutoring depends on the percentage of face-to-face teaching. Online tutoring is only necessary if there are no meetings for some time. **Informal contacts don't seem to be easily replaced by online communication.**

4.1.3 Use of New Information and Communication Technologies, Sustainability

It is hardly necessary to support usage as such; but a strategic, efficient usage bringing a competitive advantage and added value not only to students and lecturers, but also to institutions, will not come by itself.

The SVC projects are very heterogeneous. Also the difficulties to which they are exposed must be differentiated. What is common to all of them is the necessity to **defend the progress in teaching** obtained, and this, in the future, without additional means from the Federal Program SVC. Securing long term **sustainability** is probably the most important common problem.

Experience in project work, especially in **project management**, seems to be very helpful for projects to avoid frustrations. Several project leaders from Universities of Applied Sciences had no problem with reaching the project goals, thanks to the necessary reserve in planning and in the scale of the foreseen results. It is dangerous to criticize a project too much if professors from domains that had hardly ever contact with technology didn't reach their goals. Even if some teams **overestimated their capacities** in the beginning, their achievements are remarkable all the same.

Considering that all project of the second series (numbers starting with 2) were confronted with the proposition to choose one of four **e-learning platforms**, and that this was published not even one year after the start of the first series of projects, the frequent complaint that the SVC was not directive enough concerning platforms can be seen under another perspective. In addition the team of Edutech was active even before the start of the first series, and they were always available for all who needed

consulting concerning the choice of a platform. Several projects complained that Edutech often proposed WebCT. But **WebCT** was a secure choice at that time, to create simple content, and the focus should be on creating content. In fact the projects wanted to explore all possibilities of the new media, with pioneering enthusiasm and an innovative spirit. They didn't want to be held back by a solid but restrictive platform.

Especially the fact that the content of WebCT could not be composed in a completely **dynamic** way was a reason why some projects created their content on **XML** basis, using one of the many possible **platforms** (e.g. WebCT or OLAT) only if they needed it **for student administration or communication tools**.

4.1.4 Improvement of the Quality of Learning Processes by Including Interactive Teaching

Important new forms of support for learning processes are **self-assessments** (automatically corrected exercises) and **help functions** when dealing with the constantly growing information quantity. Several projects enhance self-reflection on the student's own learning process with a "**learning journal**" that is discussed with the tutor. Generally there are **new forms of interactivity between the system and the learner** and **online communication possibilities between the tutor or learner and other learners**.

Well designed online environments, automatic corrections and self-explaining material free lecturers from **time pressure during face-to-face lessons**. They are more relaxed in approaching the students. Students are more responsible for their learning; this leads to an agreeable development towards a **partnership**. This paradigm change was a big challenge: from a teacher-centered lecture to a **learner-centered coaching of student groups, with a concept designed in common and with student working time in mind** („from the sage on the stage to the guide on the side“). The new coaching function can lead to much more requests for help from students, which is problematic with large student cohorts.

E-learning can support the coaching of large student cohorts effectively. **The scenarios for coaching are very different, and above all they need human resources to a very different degree**. Once created, automatic corrections and applets allow enhanced interactivity without more human resources. This isn't the case for constructivist scenarios focusing on group processes, personal feedback and the reflection of the learning process; or at least it can be realised only to a very small extent.

The paradigm change „from the sage on the stage to the guide on the side“ can be frightening too. The project teams often refer to it; not always with these words. It means that lecturers become more vulnerable not only concerning content, but also for the essential teaching activity, because the **learners** are more self-conscious and autonomous, and they **ask for consulting services**. This is induced by the large part of self-study and the invitation to reflect their own learning processes.

The new forms of cooperation between lecturers and learners are probably more inspired by the choice of a **constructivist pedagogical approach** than by the existence of **online communication**

possibilities. Nevertheless the decision to use new technologies can act as a catalyst for further pedagogical reforms.

Only one project, 200108-TropEduWeb, dares to say with determination that they don't strive for a change in the learning culture. The other projects mostly state that the new learning scenarios with a certain part of self-study are good for self-responsibility and self-criticism and help to diminish the consumer attitude. Often the students are reluctant to leave their long-standing learning habits. Such **resistance** has been observed by a majority of the projects. This doesn't mean that the advantages of the virtual offers, like enhanced independence from space and time, are not perceived by the students.

Statements on **learning efficiency** are hard to prove scientifically. There are a lot of factors; it is difficult to isolate single elements like using learning technologies (cf. the Clark Kozma debate, bibliography part 1, reference 6). The expensive usage of new learning technologies might boost the conscious design of a learning environment, accompanied by and reflected with specialists. This effect alone might already contribute to better conditions for an enhancement of learning efficiency. The debate between Richard E. Clark and Robert B. Kozma in the nineties has led to a certain reserve concerning comparisons between learning scenarios with or without new media, because people are aware that the differences mustn't necessarily depend on the usage of media.

4.1.5 Clear Pedagogical Goals

Clear pedagogical goals were the main focus of the collaborations between projects and pedagogical consultants.

Comment: When designing the research methods for the report, it was difficult to find a scale that fits all projects for measuring pedagogical goals. The **taxonomy of B.S. Bloom** has been mentioned again and again at e-learning conferences and in project presentations. It has the advantage to be relatively well known and therefore accepted. The projects were asked about the percentages of time needed to work through all online material, distributed on types of learning objectives according to Bloom's taxonomy (cf. bibliography part 1, reference 2a: Bloom, Mesia, Krathwohl, 1964). It was not always easy for the project teams to come to a plausible estimation of their material. Nevertheless nearly all interview partners finally brought themselves to such a decision. The results are integrated in the project documentations (cf. attachment 2).

One of the most important advantages of e-learning is the possibility to be sure about one's own learning **success**, being assured to have understood really well. It happens only if there is a true interaction between the system and the learner, and if the system confirms the entries at least with "true" or "false", or, even better, if it provides additionally corresponding explanations and links to learning material as a feedback. The importance of this type of **system feedback** has by far not been understood everywhere, and often it exists only in a small part of the learning material. It is a big effort to create such content, especially if the quality of the interactions is important, and if complex questions should be treated.

4.1.6 Collaboration within Switzerland's Higher Education System

The inter-disciplinary and inter-institutional cooperation in teaching was something very new. It meant a lot of work, but also a lot of satisfaction, and it led to new networks and to new projects also in other domains.

Universities, Universities of Applied Sciences and ETH institutions provide **very different framework conditions** in the domain of e-learning:

- The problems of large student numbers and of desperate coaching relations are particularly urgent for **cantonal Universities**.
- The **ETH** institutions are particularly interested in top projects discovering new areas and creating large added value in qualitative aspects with future oriented technologies. The ETH Zurich has its own programs with ETH World and Fonds Filep, supporting e-learning projects. Also EPFL rather went its own ways up to now, even if it participated with two projects as a leading house in the Impulse Program.
- The **Universities of Applied Sciences** dispose already of excellent coaching relations. They would like to create as much benefits as possible for face-to-face teaching, with simple means and few resources. The program Creatools of "SVC Fachhochschulen" corresponded better to these requests than the SVC calls for projects.

Satisfying these very different needs with a common program proved to be demanding. A possibility would be to concentrate on domains where the advantages of cooperation are evident, e.g. **technical infrastructure and support** (cf. reference 1b, Lepori, Succi (2004). E-Learning in the Swiss Universities of Applied Sciences, page 48).

Being at the same time in **competition and cooperation** is not always easy. Complaints about this contradictory request were frequent. Cooperation was finally stronger, probably also because on the whole it can lead to advantages in the competition "to the outside". In most cases, though, finding a **legal agreement** on cooperation among project partners was ponderous, because in this context the basic competitive situation came back violently. Backgrounds like this make initiatives like **Science Commons** particularly interesting. They provide a concept for a legal settlement that may allow to open up all that has been created, to offer it to the scientific community, with good feelings and under fair conditions.

It is not yet totally clear which will be the influence of Creative Commons or Science Commons (also an innovation, starting in 2005) on an open content movement, and how material from the SVC could be published reasonably under such licenses.

The **AAI**, an innovative project, is very useful for **cooperation among institutions**, especially in the realm of student administration. This infrastructure touches much more aspects than e-learning, as any type of cooperation of institutions using web resources can be supported by it.

4.1.7 Mutual Certification of Qualification

Enhancing the **comparability of learning offers** belongs to the core requests of the **Bologna reform**. It will probably have a strong influence on the mobility of the students. **Virtual mobility** allows students for instance to have courses at several institutions without having to travel all the time – this could be very interesting e.g. for common specialised master studies of several institutions. It is still accompanied by manifold administrative and logistic difficulties, though. Only as an example: the definition and the distribution of **study fees** among the institutions.

Cooperation in teaching across the borders of the institutions was virgin territory. It is not astonishing that many projects didn't go exactly according to plan. Teaching had been very much in the own responsibility of the lecturers. Nearly no justification had to be given up to now. An agreement on **common learning content**, as it has been reached in many projects, is not evident at all, and maybe it is not necessary. Knowing about the other approaches of their peers and about the problems in cooperation is a more important result. It could be decisive for the successful conception of future projects.

Many projects have developed a **pool of modules** that can be used in different courses with different numbers of ECTS points and varying parts of self-study.

4.2 Conclusions from the Project Visits

The conclusions from the project visits are structured according to important phases and themes of project development: planning and conception; design and development; implementation, usage, and running; quality assurance; inter-university cooperation.

4.2.1 Planning, Conception

Many projects started officially shortly after the project selection. Project planning didn't include the time for completing and introducing the project team. More than half of the project proposals had to be refused because of financial constraints; therefore the teams couldn't be engaged in advance. For many projects **a delay of up to one year** was the result. This **cannot be attributed to the quality of the work** of the project teams. Additionally there were many delays due to **optimism in project planning**; a problem that is generally well known for all projects.

Pedagogical support is most important during the planning and conception phase. The learning scenarios and the teaching methods of the SVC projects are influenced by the **pedagogy of the discipline**. There are hardly any scenarios that could be transferred from one domain to the other without important changes. That's why disciplinary pedagogy is of eminent importance. This is perceived more and more. At the University of Zurich the preconditions for the introduction of **faculty e-learning coordinators** were prepared already in 2003. The positions are now taken, and disciplinary support in e-learning is now established at faculty level. The group of the e-learning coordinators is supported by the E-Learning Center, which organizes regular meetings („K-Treff“) and coordinates the whole **e-learning network of the university** with different production and service

offices. Also the University of Lausanne has already engaged several „**ingénieurs pédagogiques**“ for the faculties, who participate also in intense exchanges of ideas.

4.2.2 Design, Development

The **fixed-term jobs** in the framework of the SVC led to many **changes of personnel**. A lot of members of the academic non-professorial teaching staff came into contact with e-learning through the SVC.

The existence of recognised **manuals for design and pedagogy** proved to be important for an efficient and qualitatively outstanding production of online content.

4.2.3 Implementation, Usage, Running

Most general conclusions, e.g. on the use of technologies, are applicable also under this aspect of the project visits. They are not repeated here, but there is at least one additional aspect: **multilinguism**.

Originally multilinguism was seen as a specific speciality of Switzerland and of the Swiss Virtual Campus. Most projects had planned it. The amount of work needed for translations was **underestimated**, though. Originally it was often planned to make **translations** with student assistants. This proved to be unrealistic. Generally the participating professors have very **high expectations** for the quality and especially the **correctness** of the material produced. That's why it proved to be indispensable that the top specialists of the domains revised the translations personally. Translating such very specific disciplinary texts proved to be extremely demanding; engaging the corresponding professionals would cost a lot. Fortunately, as a general rule, the projects opted for the pragmatic solution to **translate only what was absolutely necessary** because it would be used immediately in teaching. This had the conceptually unsatisfying consequence, of course, that many learning environments are only **partially translated**, or that they are **multilingual without any translations** at all.

4.2.4 Quality Assurance

In general the SVC projects made considerable efforts to assure quality. Their most important concern is the **enhancement of the quality of teaching**. On the one hand ponderous **peer reviews** assured the content quality of the material, on the other hand several forms of **student feedback** were used to assess acceptance in the future user groups. When applying for maintenance for the SVC Consolidation Program the results of an internal project evaluation have to be presented. The projects are therefore **obliged to internal quality assurance**. The projects handle this obligation in different ways:

- Some projects, like 991053-SWISSLING, had very intense evaluations with internal evaluation teams, often **project partners**. Especially the **students** were intensely asked on their learning experiences, but also further aspects of teaching / learning scenarios were investigated. Nearly all projects have at least started to do such internal evaluations with their students.

- Another form of internal evaluation doesn't concern the quality of the learning processes, but of the material. **Peer review processes** take place in all projects in which several partners **use the same material**. This is not always done as systematically and supported by the computer as it is done with 991017-DOIT. These processes are mostly seen as something evident, and are not even mentioned. Peer review processes are ponderous, but they contribute a lot to the acceptance of the material by the partners. Often the professors continue to use only their own material, but they are conscious of the whole spectrum of project material, and there are first attempts to use material that has been created by other persons, sometimes also in foreign projects.
- The project 200114-SUPPREM is the only one to follow another strategy. There is no peer review, referring to the **academic freedom of teaching**. All parts of the material are available to the partners, and there is already an interest in sharing material.

4.2.5 Inter-University Cooperation

The new forms of cooperation are manifold. **Very rare up to now is the sharing of courses, of students and of teaching material**. First the teaching material has to be developed and finished solidly. Up to now the effort of finishing the development of content material despite delays and exaggerated plans has rather slowed down further cooperation initiatives that would presuppose such material.

Most projects have **plans for further cooperations, but no new users** yet. Sharing fails for instance because a project has received the right to use a software free of charge, and it would cost for the new partner. Or because **copyright** questions aren't clarified enough to take the risk to let a larger target public use the material; they fear lawsuits. Or because they don't trust the **quality** of their own material and want to make further reviews.

Many plans for cooperation fail because of the orientation of the material in the **content details**. Something that seems to fit may well go too much into detail and be **too specialised** at a closer look. Usually the material is **not yet structured systematically into a general and a specialised part** in order to make parts of it usable in other contexts. There is still the problem of **examples**, anyway. They reach their aim only if they are likely to rise interest and to convince. Unusual examples from foreign domains can restrain the learning success.

Fostering the sharing of online material is tightly linked with technical, legal, pedagogical, social and psychological questions; it is a complex domain.

4.3 Conclusions from the Student Survey

The following conclusions can be derived from the student survey:

1. The students use the virtual learning offering mostly to generate individual knowledge.
2. The development of exercises, tasks or **self assessment** applications will have high priority.
3. **Discussion forums** are very appropriate instruments for analysing a discussion.

4. In order to ensure quality and transparency and to support student mobility in accordance with the Bologna process it is crucial to define binding **learning goals**.
5. The learning offerings should be planned and developed so that the **students** can easily recognize their learning processes and **success**. When planning it is particularly important to allow for the fact that elaborate and sophisticated applications for **self-assessment** can be very expensive.
6. The project management has to ensure the **consistency of the content** and of the instructional (didactical) design when planning, developing and remaking the learning resources.
7. When planning and developing virtual learning offerings, **intuitive orientation** is absolutely imperative. The virtual learning offerings have to be designed so clearly that **the students don't need other instructions**.
8. When planning, conceptualizing, developing and implementing the virtual learning offering, care must be taken that it is **optimally networked with the other learning offerings**. We recommend designing a **complete teaching/learning arrangement** and communicating this arrangement graphically to the students as the basis of a syllabus.
9. In order to relieve the responsible professors and mentors, **support offered by the system** must be improved.

5. Recommendations

The recommendations are structured according to target groups, to phases and themes of project development, and to the original goals of the program.

5.1 Target Groups

Specific recommendations are given for the following target groups: SVC Steering Committee, directions of institutions of higher education, projects, competence centres, and for a general target group of persons interested in e-learning.

5.1.1 SVC Steering Committee

The following recommendations for the SVC Steering Committee are based on the project visits and the student survey:

1. The **embedding of the e-learning part in the complete learning environment** of an SVC course seems to be very important for the general success of the course.
 - a) **Coherent learning environments** are generally important for success in learning. If the different elements of teaching, like online learning environment and textbook, are not sufficiently well matched, negative feedback from students must be expected. The project management has to ensure the consistency of the content and of the instructional (didactical) design when planning, developing and remaking the learning resources.
 - b) **A complete teaching/learning arrangement** should be designed. We recommend communicating this arrangement graphically to the students as the basis of a syllabus. When planning, conceptualizing, developing and implementing the virtual learning offering, care must be taken that it is optimally networked with the other learning offerings.
2. **“How can e-learning support the Bologna process?”** This question is in the focus of most project teams.
 - a) **The implementation of the Bologna reform** is crucial for the Institutions of Higher Education today. Reflection on the well-aimed usage of e-learning in the Bologna Process has just started. It should be intensified.
 - b) **“Joint Masters”** could produce synergetic effects as a side product, e.g. several courses sharing the same room at the same time in the weekly timetable. The technical, administrative and logistic difficulties for the implementation of “Joint Masters” should be investigated.
 - c) **Binding learning goals** are crucial in order to ensure quality and transparency and to support student mobility in accordance with the Bologna process.

3. **Intercultural virtual encounters and virtual mobility** hardly ever took place. Specific incentives and appropriate framework conditions should be identified in order to deploy their pedagogical, political and economic advantages.
4. Asking the SVC Competence, Service and Production Centres as well as the new SVC projects to report separately on **aspects of automatic feedback** might boost the importance of interactivity with the system, automatic corrections and “applets” (small computer programs to support learning).
 - a) **A true interaction between the system and the learner** is decisive to give the learners a reliable confirmation on the success of their learning. The system should provide corresponding explanations and references to learning material as a feedback to entries.
 - b) **The importance of such system feedback** is not yet acknowledged everywhere; it is only available in a small part of the learning material.
5. Offering individual consulting and support for the project teams could boost the **sharing of information, know-how and products**.
 - a) It would be important for the projects to see that their work is esteemed, and it would be important for the financing parties – the government, politicians and the general public – to get **a more complete picture of the achievements of the SVC**.
 - b) **Consulting concerning all questions of further usage** of the newly created online material is a service for which project teams are asking more and more.
 - c) **Exchanging experiences with projects in a similar situation** is important to the project teams. They would like to have well-directed discussions, the more specific, the better.
 - d) **Sharing automatic corrections and applets** should be particularly stimulated. Even if the SVC never aimed at creating software, fostering the public availability of the developed software for further use could be reasonable. For instance the developments done by the projects in the framework of the SVC could be described online, and the conditions of their usage could be defined and published. Such interactive components of learning environments allow more interactivity without more need for human resources in the long term. This isn't true for constructivist scenarios relying on group dynamics, personal feedback and the reflection of the learning processes; at least it would happen only to a very small extent.
 - e) **Further education or postgraduate studies** might offer additional occasions to use the virtual offerings. Such courses, taking place only with enough registrations, could be offered through swissvirtualcampus.ch, using an automatic registration system.
6. Even with an inexpensive workforce **translations** will always be a cost factor. They are often left out, being the last link of the chain. For enhancing the accessibility of the material they would be crucial, though.

Maintenance projects could be allowed to apply for translation money if a translation would clearly open access to a large new target group.

7. **The Authentication and Authorisation Infrastructure (AAI)** can solve the problems of student administration in many different and creative ways. It works seamlessly, even with large student numbers (cf. 991017-DOIT).

There is a whole palette of procedures and solutions for the integration of a resource into the AAI. It would be useful to present all these approaches to the projects e.g. on swissvirtualcampus.ch.

All projects visited were basically interested into the AAI, but they had already been forced to find a solution for their student administration and didn't have an immediate need for new solutions.

For the new SVC projects the AAI should be important from the beginning in order to prevent the development of unnecessary additional solutions for this aspect.

5.1.2 Directions of Institutions of Higher Education

The following recommendations for institutions are mainly based on the project visits:

1. **New users** will become important if it comes to maintain the learning environment with regular institutional resources.
 - a. A user community that is large enough will be better positioned to find the necessary financing.
 - b. In order to get there, probably further investments into the launch of new cooperations will be necessary.
2. **In order to maintain the high new teaching and learning quality** the projects have to find some sort of "income", be it cash or in kind. There are different ways to make this possible:
 - a. ask directly for more public financial support;
 - b. find new partners in order to launch new projects, with the SVC project as a nucleus;
 - c. find synergies inside Swiss structures in order to free existing resources for the further development of the project;
 - d. share courses with other institutions;
 - e. find new users and paying students on the free market.

It might be crucial for the sustainability of the SVC projects to help them to generate the necessary long-term "income".

3. **Sharing courses** is an interesting option, especially in the framework of the **Bologna process**. It is still extremely rare, but it happens in some cases, especially if the courses are new.

The same course can be offered at several universities, with separate student groups. There are cases where the forum is shared, but the courses are separate. And there are rare cases where the same course is conducted for a mixed group of students from different institutions, leading to the virtual mobility of the students.

In fact the sharing of courses with mixed groups already took place for years, e.g. in some Psychology courses between the Universities of Lausanne, Fribourg, Neuchâtel and Geneva. The students of Psychology can choose some courses at another university in their regular curriculum, because each University has its speciality, and they travel from one place to the other (an information from Nathalie Suisse Bänziger, 991018-SOMIT).

If courses are actually shared and take place in one university instead of two, the synergies and the economic potential of this solution are evident. But this means to give up some lectures, and as long as professors have to fear to lose the corresponding resources, they won't accept this readily. This problem can only be solved at an institutional level. Institutions could create incentives for efficient structures.

4. **Incentives for efficient structures** might be the following, partly belonging to the Bologna process:
 - a. If professors are ready to give up lectures in such a context in order to have more resources for enhanced teaching or for more research, the institutions could guarantee the status quo for some time. This might make a big difference, especially for UAS where everything has to be financed separately (cf. bibliography part 1, reference 1c, page 24).
 - b. A new currency seems to appear at universities: the "examined E", the equivalent of teaching and corresponding exam in order to give one ECTS point. Depending on the domain, a specific sum is attached to it; it is paid to anyone who does this teaching. As a consequence it becomes attractive for the individual lecturer to accept more students; but without efficient quality assurance measures this principle might reduce the quality of teaching.
 - c. The Rectors' Conference of the Swiss Universities (CRUS) has defined a limit for the recognition of curricula: at least 3 professors for each curriculum, at least 20 new students per year. Sharing courses with mixed, enlarged groups, could "save" small domains (cf. bibliography part 1, reference 7, page 2).
5. **Concerning the potential for economies out of SVC projects** it has become clear that substantial economies will only become possible at the time when the economic, logistic and administrative advantages of the new technologies will be fully operational. Only a sufficiently large usage will have the power to transform institutional procedures. An example:

Only if there are several concurrent e-learning courses in parallel it will become possible to share lecture rooms. One could start with a freshmen course in the first week; courses

for later semesters and other students already used to e-learning could start with e-learning sequences and use the lecture rooms later.

In order to do this the rooms would have to be reserved in a very flexible and well coordinated way, and it would have to be possible to carry out courses also without a special real room. This should be considered in the planning of booking systems and other long-term projects.

On the other hand students should have enough rooms for silent self-directed study and also for individual work group meetings.

6. **In the years 2004/2005 the Bologna reform was much more urgent** for the lecturers of the Swiss Universities than the introduction of e-learning, because it leads to re-structuring and the corresponding existential fears.

Several times the project teams asked for patience, and suggested to wait until the content of the new study branches would be defined. As soon as this would be done, it would be possible to fully use the possibilities of e-learning when designing the pedagogical detail of the new curricula – but not before.

7. **Open Source is topical** for many project teams, because the idea of having the right to use a software forever without charge, and of being able to keep it up to date themselves if needed, is tempting in times of large uncertainty.

The project leaders feel less exposed to the danger of depending completely on the original developers in a key issue, because the source code is available and can be analysed and further developed by computer specialists from their own institution.

It must be considered, though, that the complexity of today's applications could rapidly let the resources, that are necessary for such an analysis, grow to infinity. Therefore the efficiency and the critical mass of the user community is crucial.

The user community will most probably only contribute to further development in a long-term perspective if the large users – especially public offices and institutions – have made a strategic decision in favour of open source and therefore of their own development teams, and promote the use of a certain software.

In the end the sustainability of open source software depends on political decisions. In France and in the European Commission such decisions in favour of open source in the domain of e-learning platforms have already been taken.

8. **The relation between education and science** is crucial for the typical SVC participants. The collaborators of these educational projects are nearly exclusively scientists. This type of work will only be positive for their career if competence in teaching becomes more important in the selection process of future professors.

The most important factor to enhance the general quality of teaching is **insisting on aspects of teaching when choosing a new professor**.

This could change only if there would be **specialised professorships** and if beside the high scientific qualification there would not have to be, in each case, an equally high quality of teaching.

Science and teaching are very different domains asking for **very different aspects of a personality**. The requirement for a perfect balance of both domains in one single person risks to exclude both extremes from institutions of higher education, finally rather promoting a general **mediocrity** than excellent achievements of the whole institutions.

Up to now the scientific aspect still prevailed. The **cooperation with lecturers** having pedagogic ambitions might help scientifically focused professors to make their new findings optimally accessible for teaching.

5.1.3 Projects

The following recommendations for projects are derived from the results of the project interviews:

1. **The personal commitment and the well-directed work of the project responsables** seems to be crucial for the success of the projects. Also project leaders who showed very little presence could present good results; it seems to be decisive if they fully support their team at the crucial moment, and if the team can deploy fully its skills with this support. The reserve of the project leader doesn't seem to be harmful for the efficiency of the work, on the contrary.
2. **Changes in the team, especially in the project coordination**, do make a difference. This is not surprising: In most projects only the coordinator was employed fully or at least above 50% for the project during a certain time.

The following recommendations are derived from the results of the student survey:

3. **Binding learning goals** are crucial in order to ensure quality and transparency.
4. **Intuitive orientation** is absolutely imperative for virtual learning offerings. They have to be designed so clearly that **the students don't need other instructions**.
5. The development of exercises, tasks or self assessment applications will have high priority.
6. The learning offerings should be planned and developed so that the students can easily recognize their learning processes and success.
7. When planning it is particularly important to allow for the fact that elaborate and sophisticated applications for self assessment can be very expensive.
8. **Support offered by the system** must be improved in order to relieve the responsible professors and mentors.

5.1.4 Competence Centres

The following recommendations are mainly based on the project visits:

1. Today the trend goes towards enhancing teaching and learning, with or without e-learning, according to the circumstances. **It has become fashionable to focus on learning, not on e-**

learning, and to say that e-learning would disappear as something separate in some years. But e-learning needs a lot of technical infrastructure and special conditions in order to work at all. Focusing only on learning might lead to a neglect of these basic conditions and therefore in the long term to a failure of e-learning, whereas the focus on enhanced e-learning necessarily leads to better learning, especially in environments where the local blended learning, not distance learning, is the usual basic scenario, as in the SVC.

2. It could be useful to **focus explicitly on the total achievements of e-learning activities**, especially also on the technical achievements and on professional conditions for production. In the years 1999 to 2001 the technology-driven platform discussion dominated the SVC, with many negative consequences. Then everybody started to focus on pedagogy – this is the main trend today. It could be useful to push a little in the opposite direction.
3. **The complexity of the learning processes** should be taken into account when measuring a project's success. It is more demanding to examine students for learning objectives beyond knowledge, understanding and application, and to conceive activities enhancing such higher capacities. Projects with such aims will most probably prepare less student working hours.
4. The **Creative Commons** license (or maybe Science Commons) could bring a possible future perspective to resources that might become orphaned when project leaders are conferred emeritus status (<http://science.creativecommons.org/>).
5. **E-learning conferences with their project exhibitions** help to make the projects known and to find new partners. This didn't happen much up to now. The project material was functional about one year later than originally planned. Many projects started their first regular course with the complete material in the winter semester 2004 / 2005. Only after having completed the basic material new partnerships become attractive in order to secure the future development of the project. Project exhibitions might become more important than ever.
6. **A virtual centre for translations**, where advanced students who are specifically qualified by multilingualism and projects with a need for translation could apply, would be useful for projects to help themselves, because the involvement of professional translation agencies would probably be always out of reach financially. Translators should have the target language as their mother tongue; that's why it would be useful if e.g. students from the Romandie who have learned a discipline with the french vocabulary could translate a project from the german speaking part of Switzerland, out of the same discipline, or vice versa. The students would probably learn a lot, and the quality of the translation would probably not suffer much because the translator knows the domain fairly well and knows quite exactly what must be meant. Therefore such a student should be able to use the tools for translation efficiently.

5.1.5 General Target Group: Persons Interested in E-Learning

The following recommendations are based on the project visits and the student survey:

1. **When introducing self-study** it is important to make sure that the **time needed to study** is still reserved.

Comment: It is not evident for all persons involved to respect such study periods just like a lecture timetable. This is especially true for the **superiors of working students in continuing education**.

Time management is more difficult for students during phases of self-directed study. Face-to-face studies definitely reserve some periods of time for dealing with the subject material, and direct personal contact with lecturers and students is motivating.

2. **In the use of online forums** there is a clear regularity: If a forum is just at the student's disposal, it is nearly never used. Nevertheless discussion forums are very appropriate instruments for analysing a discussion.

There must be a compelling reason to use the forum, **to post an entry and to react** to another entry. This seems to be the minimal condition for a forum that works.

Comment: As this has been seen so clearly now, future course leaders could count with it and decide if they want to do without a forum or if they want to have exercises with clearly structured forum participation.

Computer projects are a special case, like 991043-Vitels: Generally forums are very much adapted for finding solutions for concrete detailed problems of programming together. Forums are also used intensely in the professional context of this domain.

3. Although there is a large variety of **intercultural cooperation** in the SVC, among lecturers and students, but also inside the project teams, the hope that many students would have fruitful intercultural experiences has hardly ever been realised.

Comment: It happens that forums are shared among several courses, but without common teaching this is rather irritating. Some projects have started to host several WebCT-"clones" in parallel, in order to separate the courses and the corresponding forums. In most cases students have no contact with fellow students from the same course at another institution.

Just like the use of forums, intercultural cooperation has to be designed in clear learning scenarios, and conceived for reasonable added value, in order to be successful.

Common field visits and the validation of exercise results by the creators of the modules and the exercises are such scenarios. They have positive effects in several aspects. They are not only convincing pedagogically, but also concerning the efficient use of resources.

4. **Students in the first semester and newcomers in general** will probably need much more direction than experienced learners because they first have to understand the basic rules of the new environment.

Comment: Freshers would like to know the lecturers, their character, their ideas and expectations before they start to learn autonomously. Otherwise there is the very real

risk that the different expectations of lecturers and learners confront each other only during the exam.

There is another situation in courses of **continuing education** where learners know very exactly what they would like to learn, and where the examination has not the same importance.

5.2 Phases and Themes

The following recommendations are structured according to important phases and themes of project development: planning and conception; design and development; implementation, usage, and running; quality assurance; inter-university cooperation.

5.2.1 Planning, Conception

SVC projects are extremely varied. As a general tendency, each simple lesson learned from the development of one project is counter-balanced by a contradictory example from another project.

Some few points shall be outlined here all the same:

1. Start only if the partners are truly in the same boat! Above all if there is no pressure in the right direction (e.g. institutionally).
2. Check out if there is **an undeniable necessity from a structural point of view**.
3. Don't start "top down" – e.g. by the five medical faculties – but rely on good local partners.
4. Centralise production in one team. The other partners accompany the project, fulfil tasks in the domain of content and make sure that the product will be usable for them.
5. Not too many partners – but make sure that the future user group has a positive attitude towards the project.

5.2.2 Design, Development

If many new projects chose to accept a common standard, e.g. the eLML standard XML framework (cf. www.elml.ch), and would use it as a basis of their design guidelines, this could contribute quite much to efficient production.

5.2.3 Implementation, Usage, Running

As soon as there is more self-study and distance teaching, there must be much more precision in the presentation of the course, and the framework conditions must be explicitly formulated. Many things that seem to be evident must be explicitly formulated under such conditions.

5.2.4 Quality Assurance

Among the different methods of quality assurance, like student questionnaires and peer reviews, the analysis of tracking data would be promising, but the students were opposed to it, and possible legal problems prevented the usage of these data.

Tracking data can be legally used as soon as the students have agreed to make them available. Discussing transparent evaluations of aggregate tracking data together with students could become a regular feedback ritual that might be motivating for all participants. Students should have the possibility to define to which extent their data may be analysed. This might help to get at least some data sets with the legal permission to analyse the individual learning paths.

Most projects couldn't inform on the duration of usage by the students immediately, but they indicated that these data were available through the monitoring and statistics program of their website (e.g. from WebCT), and that they could theoretically be evaluated.

5.2.5 Inter-University Cooperation

All projects visited showed a basic interest in the AAI, as soon as they had to administer students of other institutions. But as all these projects have already found a solution for their student administration, the need for a new solution is not really given. It might be different if there is no solution yet, e.g. for the new SVC projects.

In order to connect a website the institution should support the AAI as a „Home Organization“. If it doesn't exist (yet), the users can be registered in the Virtual Home Organization (VHO) from SWITCH, as a temporary solution.

5.3 Original Goals of the Program

The following recommendations refer to the original goals of the program.

5.3.1 Development of Internet-Based Course Modules Supported by the Involved Institutes

The interviews, the website visits and the data collected and examined in the framework of the Status Report 04 made clear which tasks have to be regularly done in a SVC project and which functionalities should be covered by the technological infrastructure of the project:

1. **Dynamic websites:** Because of the enormous quantity of data it would hardly be responsible to create non-dynamic websites; the smallest change would lead to interminable “copy paste” activities.
2. **Flexible course structures:** It is also very inconvenient if the material is too tightly linked with the course structures. Normally it should be possible to rearrange the same material in different sequences for each course, and to complete it with specific details for the course. This difficulty was usually solved by some cunning manoeuvres, but in fact this should be possible without copying the material.
3. **Version Control:** Updates should be visible immediately and everywhere; several versions of the same material should be possible all the same; and the versions should be managed automatically. This is important for the adaptation of the material to different needs. If this becomes too complicated for users, the pool of material might drift apart and become so confusing that it is no longer useful for further synergies.

4. **Update of Links:** Hypertext as a complex system of links has fallen into disrepute, because links get broken easily. Especially linking single words inside a text with websites outside of the system was often avoided systematically. The control and the efficient “management” of links would be important for the coherence of large data samples and for using all possibilities of the internet.
5. **Export also from Communication Tools:** The question “How and in which format can content be imported and especially also exported?” is nearly as important as the question “Which possibilities are offered by this online learning environment?”. Often different sets of communication tools are needed per course. The tools should also allow the exchange of files and the creation of ad-hoc material collections. It should be possible to archive and to export the content created during the course inside these tools (also the chat files).
6. **Test Systems, Tracking, Personalization, Quality Assurance:** Students should have an interactive tracking and personalisation system at their disposal, allowing them to extract individually the parts with which they have difficulties in learning. They should have the possibility to make personal notes to the single learning units and to mark important points. Such possibilities were mentioned as the main advantages of paper documents. Students will probably not use these features if they are not sure which data are collected about them and how they are used. This is why students should be integrated into the quality assurance processes. They should have the possibility to analyse their own tracking data, and to make them accessible in different ways in order to allow the amelioration of the system. They should comment the data and discuss them with the project responsables. With the active acceptance of making the data accessible all legal problems with the analysis of tracking data disappear.
7. **Offers that are Accessible in the Long Run:** Students normally take their textbooks home. They can use them for a lifetime; looking at the books recalls immediately and intuitively what they have learned. The motivation to work intensely with e-learning offers might grow if students can count on having them continually at their disposal.
8. **Tools for Peer Reviews:** Peer Reviews generally are a rather ponderous process, but they are crucial for the acceptance of the produced content. Integrated tools for the management of these processes might facilitate the transparency and the coordination and allow the participants to be more flexible with this task.
9. **Basic Content Structure:** A timely agreement on a basic content structure like ELML (www.elml.ch) makes the creation of content easier.
10. **Attractivity and Innovation:** The software used shouldn't weaken the creativity and the enthusiasm of the partners. It should allow attractive design possibilities and be open enough to integrate innovative elements.

Concerning the design of the learning environments, there are, among others, the following lessons learned:

1. **First scenarios, then software:** Prototypes should first and foremost test the pedagogical scenarios and only secondarily the software. Often even paper material is sufficient for first pedagogical tests with a small group.
2. **Use forums actively:** Forums are only used if there is a reason to visit it, to make a contribution and to react on another contribution.
3. **Create coherence:** The coherence of the complete learning environment is particularly important. Avoid using an e-learning environment and a textbook that is not adjusted to it in one and the same course.
4. **Make clear what is relevant for the exam:** Students must know unequivocally and in detail what is relevant for the exam and which are the reference texts. Indicating general learning objectives is not sufficient. Additional material and complex applications, used as examples but not belonging to the core subject matter to their whole extent, should be clearly marked in order to facilitate the student's time management.
5. **Choose learning material restrictively:** Only the reduction of the obligatory subject matter to the necessary prerequisites of demanding activities will allow to focus on the most important competencies and capacities that should be learned. Only then it will become possible to replace the memorization of complex matters by more complex learning processes.

Instead of a specific learning environment it could be more reasonable sometimes to use the future specific work environment of the students as a learning workplace. Especially some projects of the Universities of Applied Sciences, 991054-Forum New Learning, 991041-Eduswiss Online and 991035-Hybrid Classroom, but also the university project 991021-eCF mentioned this point. Modern workplaces contain most functions of learning management systems, like communication tools, platforms to exchange files and specific calculation tools; mostly as a combination of independent applications. One can go from one to the other just as in today's offices one goes very naturally from one application of Microsoft Office to the other, jumping easily between Outlook, Word, Excel, Internet Explorer and others.

As a general rule **learning to use a learning tool should mean minimal additional work**, and it should only become necessary if there is a true added value from this tool (as for instance with the applets of 200133-i-Structures, the Algebra Workbench of 200101-ViLoLa or the Components of 991035-Hybrid Classroom). The current **future workplaces** of the students should not yet contain corresponding tools. It is interesting to see that these new tools seem to be useful also for some applications in practical work; an unexpected side effect.

It was said very often that soon nobody would speak about e-learning anymore; only learning would be the buzz word. It became clear that the coherence and the quality of the complete learning environment is crucial for the success of learning. On the other hand e-learning needs a lot of technical infrastructure and special conditions to work at all. You cannot dance well on an uneven floor. The systematic **quality control of all aspects of e-learning**, especially the control of the **usability** of the web resources, would be important to assure the quality of these learning environments. E-learning is particularly exposed to disturbance, but in the optimal case it is also

singularly inspiring and instructive. Without special attention also for the technical side such learning environments might soon wither away and become unusable.

5.3.2 High-quality Web-Based Courses that can be Used Independently of Time and Place

The students of Swiss institutions of higher education are mostly not used to autonomous study, nor to distance learning. As it seems, they have no difficulty to understand distance learning concepts, but they don't need them. This is not astonishing: **The traditional target group of an institution for students who study for the first time is very different from the target groups of distance teaching universities.** How large the latter are in Switzerland, and if they would be interested in studying at Swiss universities at a distance, is hard to tell, as long as Swiss universities offer nearly no distance studies. It is possible that courses profiting from the **image of traditional universities** would be better accepted and could attract a **new and larger public.**

The offers for continuing education in the SVC are not listed officially up to now, and there is **no overview**, where and to which extent **distance learning** independent of space and time is offered in the **courses for continuing education** of the SVC. At the moment the activities in this domain are still limited. In the interviews it became clear again and again, that the design of new courses for continuing education would need a **budget for conception and know-how for implementation**; the project teams cannot afford this by themselves.

The idea is dominating that courses for continuing education should be conceived in a totally different way compared to regular university courses. Above all the common opinion says that such a course should only be offered if the need is clearly proven. It is not sure if this approach will ever allow to reach **target publics that haven't been involved in lifelong learning yet.**

„**Continuing education light**“ can work very well and lead to courses of good quality, without a ponderous, completely new conception of the courses; it is shown by 991021-eCF and 991025-Financial Markets. In the project 991018-SOMIT (Sportmanagement) regular students and students for continuing education are coached by the same tutors. Of course the courses have to be up to high quality standards in order to be suitable for continuing education. It would be interesting to see if there would be a public if the new, pedagogically designed SVC courses were adapted with minimal efforts to continuing education, according to the principle of the courses of eCF and Financial Markets (business administration / financial markets), and if they would be offered to a large public by the SVC, with some **publicity**. If there were still no courses after that, one could say with better reasons that it works only for domains like management, business administration and financial markets.

5.3.3 Use of New Information and Communication Technologies, Sustainability

The products of the SVC projects are not really adapted to commercial use, but they could be re-used. In most cases they would have to be adapted for further usage, which means that in fact they are bound to the offices and the people that have created them, and they can be used only in an efficient way if the original developers can be contacted or if the know-how transfer is guaranteed. Most cases of re-use mentioned in the examples have to do with further activities of the **original project**

collaborators. These persons would have to be **further involved and motivated** to document and to transfer their knowledge, if these resources should have a chance for sustainability, too.

To assure sustainability also in the sense of **protecting the knowledge gained**, future perspectives for the original development teams of the SVC should be found, providing the possibility to involve the members of the team at least from time to time. They should be motivated to document and to transfer their knowledge. They could find new tasks in the framework of further projects, e.g. in **continuing education**.

5.3.4 Improvement of the Quality of Learning Processes by Including Interactive Teaching

Interactive teaching by means of interactions **between the computer system and the learner** can be extended to **large cohorts of students nearly without financial consequences**. Interactive teaching in the constructivist sense, with high level student activities and more **individual coaching**, is **not scalable like automated feedback**, but it is much more valuable and **adapted to university teaching**. A considerable quality enhancement is therefore not possible without additional financial means.

Relieving professors from repetitive correction work that can be done automatically should be a “must” anyway. But it is not yet the quality enhancement the SVC projects strive for.

E-learning environments and self-study enhance the **autonomy of the learners**. Enhancing cooperation among learners is certainly useful in order to prevent isolation. Through online communication tools such cooperation gets a more official touch. There is a **new, half-public space** in which students are exposed also through the **publication** of their works. This leads to more competition and generally to good results.

5.3.5 Clear Pedagogical Goals

The definition of clear pedagogical goals should be actively supported by specialised consultants.

The discussion on which learning platform was the right one was a heavy load for the start of many SVC projects of the impulse program. It diverted from the core questions of the educational concept and of student coaching and focused on questions of technical details that were rather posed too soon. Some features like chat or forum proved to be simply unnecessary in many teaching scenarios.

With many projects the focus on pedagogical and content-related issues came only with the development of the project, starting with first tests with students and with their analysis, together with pedagogical consultants. They were partly external consultants engaged by the project (several times e.g. Ernst Elsener, telecol online); additionally, where present, members of the **e-learning support centres** of the institutions. Some projects depended also on the support from the SVC mandates **InterstICES** and **eQuality**.

5.3.6 Collaboration within Switzerland's Higher Education System

Many project leaders are currently occupied with the **content conception of new curricula in the framework of the Bologna reform**. When these curricula must be transformed into pedagogical

learning scenarios, new forms of cooperation and of the sharing of teaching material might become attractive.

Questions concerning the Value Added Tax (VAT) might suddenly become important: Has it to be paid? If the correction work done by a professor for a foreign institution is a service: yes. If it is an educational offering: no. **If the VAT has to be paid, such a cooperation project would suddenly lose much of its attractiveness.**

The total **sharing of courses** - one course being carried out only at one and the other only at the other institution, with entries in both lecture timetables – could of course be even more efficient. It might be felt like a removal of education, though, and could interfere with the identity of the university if it happened to a too important extent.

The further development of inter-institutional cooperation on the level of the single SVC projects and on the level of the participating institutions leads to a balancing act between the wish for more efficiency and the respect for the autonomy, the identity and the integrity of the institutions. **Networked projects probably have more chances in this context than centralised approaches.** The networked approach is one of the strengths of the **AAI**: The Home Organization stays the one and only holder of student data; the holders of resources are free to decide to whom they want to give access.

The principle of this approach, namely that each instance is as free as possible to decide exactly on the domain of its main interest, could be transferred to other situations. **Comprehensive portals and project databases** could link different portals instead of building up their own project databases. The implementation of www.bio-med.ch, relying on the decision of the eleven bio-medical SVC projects to opt for a common portal, could be a pioneering deed, even if the current implementation status is poor (only three of eleven projects). Creating a common virtual place for the SVC projects of a particular specialist field could be a first step to the creation of common virtual “competence centres” for e-learning in a particular field (e.g. CENAT Natural Hazards Competence Centre, www.cenat.ch, for 991023-NAHRIS). **Professional associations** and other organizations with a relation to the particular didactics of the field could be particularly suited to support such projects.

The **AAI** is generally regarded as important, but only few projects indicate it as a first priority. Other inter-institutional infrastructure is hardly ever mentioned. **WebCT Vista** is mentioned regularly, but the project teams are doubtful about the long-term availability of such offers. They rather trust their own institution; only there is a reliable commitment. This suggests that **explicit and clearly agreed long-term support from the single institutions would efficiently wipe out the resistance against certain inter-institutional offers of infrastructure.** In the framework of **SWITCH** such processes have already taken place.

5.3.7 Mutual Certification of Qualification

Originally it was expected that there would be a **common course** for several institutions. This **happened rarely**. As a general rule each SVC course is offered at one single institution and refers to **another choice from the pool of online material** than the other courses of the same project. Even if

some parts of the material look very unified and systematic, they are rarely used exactly as foreseen. The project teams found out rapidly that they had to create **flexible material** in order to satisfy the partners at the different institutions. Even after the Bologna reform the institutions of higher education will still offer **varying framework conditions**. Exactly parallel courses at several institutions will probably remain an exception. What might happen are **new courses** that are conceived and executed in common. For these courses **the problem of curricular integration has to be solved before the creation of the course material**. The SVC courses of the Impulse Program are mostly based on existing courses. As the participating institutions had to finance the projects themselves to the extent of 50%, they made sure in time that the planned results would correspond to their needs.

The **Bologna reform** could boost e-learning on the whole, because there is **more need to prepare exams**. Students like to refer to online resources while doing this, especially for **self assessments**.

Only few projects dared to innovate with exams. The danger of recourses was considered as too high. **Online exams are absolutely topical** because the attribution of every single ECTS point has to be examined in the future, also for lectures with very large student numbers. **The “examined E”** seems to become some sort of a **new “currency”** in institutions of higher education. The effort for the attribution of ECTS points might become an important subject. The expenses vary a lot even in the same domain, according to the quality of coaching and to the tutoring time invested.

The development towards **virtual mobility** has been rather disappointing so far. More cooperation among Swiss institutions of higher education should lead to more exchanges of students – also virtual exchange – and to **intercultural cooperation** in common courses (more students per course) and to further synergy effects. Up to now this happened very rarely.

“**Joint Masters**” are certainly interesting for the use of e-learning; especially domains with few students could secure the **critical mass of 20 students per year** (cf. reference 7). And for the access to such common master studies of several institutions it is very important that the students can work for comparable start conditions. E-learning is actually suitable for „**mise à niveau**“, at least according to 200136-OPESS. Also some other projects mention this point as an important usage of their material. In such studies **real and virtual mobility might happen automatically**. How to design them successfully should be a subject of attention.

6. Final Statement

Based on the data collected for the Status Report 2004 it can be said that the expectations and aims of the SVC were fulfilled in most aspects. It happened partially in a different direction compared with the original proposals. The redirections during the Impulse Program corresponded to new insights and developments in the context of the rapidly changing e-learning domain, and they made sense. Blended Learning, for instance, the mix of face-to-face and distance learning, became a guiding concept only with time. For students, SMS, e-mail and internet are now a part of everyday life. It seems to become evident to use new media.

Some other expectations actually have not been fulfilled. Intercultural virtual encounters and virtual mobility nearly never took place. Without special incentives and framework conditions they probably won't happen, even if the pedagogical, political and economic advantages are evident.

The recommendations and suggestions out of the Status Report 04 can be summarized as follows:

Suggestions from the quantitative part:

1. Check if the virtual offerings can be used more in further education or in postgraduate studies.
2. The development of exercises, tasks or self assessment applications will have high priority. In order to ensure quality and transparency and to support student mobility in accordance with the Bologna agreements it is absolutely crucial that virtual learning offers define binding learning goals, communicate them and assess them. The learning offerings should be planned and developed so that the students can easily recognize their learning processes and success. When planning it is particularly important to allow for the fact that elaborate and sophisticated applications for self-assessment can be very expensive.
3. When planning, conceptualizing, developing and implementing the virtual learning offering, care must be taken that it is optimally networked with the other learning offerings. We recommend designing a complete teaching/learning arrangement and communicating this arrangement to the students e.g. as the basis of a (interactive) syllabus.
4. Tools for learning activities and self-assessment with a high usability have to be integrated into virtual learning offerings.

Suggestions from the qualitative part:

1. Use e-learning to support the Bologna process:
 - a. foster coherent learning environments; focus on the embedding of the e-learning part in the complete learning environments;
 - b. intensify reflection on the well-aimed usage of e-learning in the Bologna process;
 - c. support „Joint Masters“;
 - d. support intercultural virtual encounters and virtual mobility.

2. Automatic feedback:
 - a. foster true interaction between system and learner;
 - b. explain the importance of this type of system feedback.
3. Individual consulting and support for the project teams in order to foster the exchange of information and the sharing of know-how and products:
 - a. offer consulting in all questions of further usage;
 - b. support the exchange of opinions with projects in a similar situation;
 - c. foster the sharing of automatic correction utilities and „applets“.

In addition, the conclusions of the reports of the mandate contain strategies for sustainability and lessons learned from the experiences of the SVC projects.

Bibliography

General Remark

The mandate “SVC Status Reports and Project Monitoring” focuses on the observation of the SVC projects of the Impulse Program 2000–2003. It doesn’t discuss the extensive literature produced on e-learning in recent years (see e.g. <http://www.elearning-reviews.org>, or the publications of the „Gesellschaft für Medien in der Wissenschaft“, <http://www.gmw-online.de/>). Therefore the quotations and references are deliberately reduced to a minimum, and the bibliography is restricted to the works quoted.

Part 1: Literature of Reference for the Report on the Results of the Project Interviews

1. Reports on E-Learning at Swiss Universities

1a) Bundesprogramm Swiss Virtual Campus (SVC), Impulsprogramm 2000-2003

Teil I: Schlussbericht Programmevaluation (M. Gertsch, Dr. J.F. Perellon, Prof. Dr. K. Weber), Bern, Juni 2004

Teil II: Interimsbericht (Prof. Dr. P. Stucki, Dr. C. Rizek-Pfister), Zürich, November 2004
publiziert auf www.cus.ch (D/F)

1b) Benedetto Lepori and Chiara Succi (2004). E-Learning in the Swiss Universities of Applied Sciences. newMine Nr. 4, NewMedia in Education Laboratory, Università della Svizzera italiana, Lugano.

1c) Gertsch, M., Schneeberger, J. (2004). Evaluation Creatools, Schlussbericht im Auftrag des Bundesamtes für Berufsbildung und Technologie. Koordinationsstelle für Weiterbildung, Universität Bern. (Creatools ist ein Programm des Swiss Virtual Campus Fachhochschulen 2000–2003)

2. Pedagogical taxonomies

2a) Bloom, B. S.; Mesia, B. B.; Krathwohl, D. R. (1964). Taxonomy of Educational Objectives (two vols: The Affective Domain & The Cognitive Domain). New York. David McKay.

2b) Leclercq, D. (2003). Méthodes de Formation et Théories de l’Apprentissage, Editions de l’université de Liège, 2003, 2 volumes.

2c) Leclercq, D. (1998). Pour une Pédagogie Universitaire de Qualité, Sprimont, Mardaga.

3. Pedagogical support in the framework of the Swiss Virtual Campus

3a) Bilan de l’évaluation du mandat InterSTICES réalisé auprès des acteurs des projets, Version de travail. Jacques Viens, Daniel Peraya, Catherine Bullat-Koelliker, Octobre 2004, disponible en ligne : <http://tecfa.unige.ch/proj/cvs/pub.php>

3b) Rapport intermédiaire d’activités : 2003. Principaux résultats du mandat et recommandations pour la phase 2. Jacques Viens, Catherine Bullat-Koelliker, Daniel Peraya, 27 février 2004, disponible en ligne : <http://tecfa.unige.ch/proj/cvs/pub.php> ; Annexe 1 : Bilan de la formation sur le tutorat en E-Learning.

3c) Evaluation des Seminars e-Praxis (Swiss Virtual Campus). Urs Frei, eTraining by Teachforce, www.elernen.ch; Ernst Elsener, telecole online, www.telecol.ch (2003)

3d) Abschlussbericht zuhanden des Lenkungsausschusses des Swiss Virtual Campus, „pädagogisch - didaktische Beratung und Evaluation“ Januar 2004. Prof. Dr. Jürgen Oelkers, Dr. Damian Miller, Dr. Markus Roos, Dr. Deborah Vitacco, Prof. Stephan Knorr, lic. phil. Sonja Geiser, Pädagogisches Institut der Universität Zürich AP, Gloriastrasse 18a, 8006 Zürich.

3e) Pädagogisch-didaktischer Support für Fachhochschulen:
SVC-Projekt Forum New Learning, www.fnl.ch

4. License agreements for Open Content

<http://science.creativecommons.org/> ; analogous to the GNU Public License for Open Source.

5. Suggestions from the domain of Distance Learning

5a) Gerson, S. M. (2000). E-CLASS: Creating a Guide to Online Course Development For Distance Learning Faculty, Online Journal of Distance Learning Administration, Volume III, Number IV, Winter 2000, <http://www.westga.edu/~distance/ojdl/winter34/gerson34.html>

5b) Moore, M. G. and Kearsley, G. (1996) Distance Education: A Systems View. Belmont, CA: Wadsworth.

6. Clark Kozma debate

Richard E. Clark (1994), Media Will Never Influence Learning, ETR&D 42(2) 21-30, accessible via <http://www.usq.edu.au/material/unit/resource/clark/media.htm>

“The Great Media Debate”, organised by Johannes Cronje, University of Pretoria, 1994.
<http://hagar.up.ac.za/rbo/construct/media.html>

Clark, R. E., Ed. (2001). Learning from Media. Greenwich, Information Age Publishing.

7. Strategy of the Rectors' Conference of the Swiss Universities

Universitätslandschaft Schweiz: Strategie 2005–2015. Verabschiedet von der CRUS am 17. September 2004. Paysage universitaire suisse: Stratégie 2005–2015. Adopté par la CRUS le 17 septembre 2004. www.crus.ch

Part 2: Literature of Reference for the Student Survey

ATTESLANDER, P. (2003): Methoden der empirischen Sozialforschung. Walter de Gruyter, Berlin, New York

BENNINGHAUS, H. (2002): Deskriptive Statistik. Westdeutscher Verlag, Wiesbaden

BORTZ, J. (1999): Statistik für Sozialwissenschaftler. Springer, Heidelberg

BORTZ, J./DOERING, N. (2002): Forschungsmethoden und Evaluation für Sozialwissenschaftler. Springer, Heidelberg

BÜHL, A./ZÖFEL, P. (2005): SPSS 12. Pearson Studium, München

DENZIN, N. (1989): The Research Act. Prentice-Hall, Inc., New Jersey

HIRSIG, R (2004) : Statistische Methoden in den Sozialwissenschaften I und II. Seismo, Zürich

JOHNSON, CH. (2000): Educational Research. Allyn and Bacon, Boston, London

SPSS (2002): SPSS 11, für Windows, Einführung. Zürich

Appreciation

Here we would like to express our gratitude to all those who supported and accompanied us in this work. Special thanks go to:

- the 50 project leaders,
- the project coordinators,
- the project collaborators,
- the students,
- the directors and collaborators of the e-learning support centres,
- the members of directions of institutions of higher education,

that supported us and took part in the discussions. They received us with openmindedness and in a very friendly way. In long and precious discussions and interviews, they gave us important information that could serve as a basis for this SVC Status Report 04.

We cordially thank the responsables of the SVC projects for their good and open cooperation, and the SVC Steering Committee for their confidence.

Attachments to the Status Report 2004: List of Documents

List of the Documents Delivered for the Status Report 2004

- **Main document: Consolidated results**
Swiss Virtual Campus Status Report 2004: Consolidated Results of the Mandate “SVC Status Reports and Project Monitoring” concerning the Projects of the Impulse Program 2000–2003, March 2006, approx. 60 p.; C. Rizek-Pfister, D. Miller, available in English and German
- **Attachment 1: Report on the project interviews**
Swiss Virtual Campus Status Report 2004; Results from Project Interviews; Impulse Program 2000–2003, March 2005, updated version June 2006, approx. 160 p.; C. Rizek-Pfister, available in English and German
- **Attachment 2: Corresponding documentation**
Swiss Virtual Campus Status Report 2004; Documentation of the Projects; Impulse Program 2000–2003, June 2006, approx. 770 p.; C. Rizek-Pfister; project documentations in French and German, introduction in English
- **Attachment 3: Report on the student survey**
Projektübergreifendes Monitoring Swiss Virtual Campus, Quantitativer Teil, Projekte des Impulsprogramms 2000–2003, Erhebungsphase 11. 01. 05 – 30. 09. 05, March 2006, approx. 110 p.; D. Miller, available in German, with summary in English

List of Complementary Documents on the Status of the SVC in 2003/2004

The following documents complement each other:

- the “**Consolidated Results**” of the mandate “**SVC Status Reports and Project Monitoring**”
- the „**Interims-Report zum Impuls-Programm SVC**“ (Prof. Dr. Peter Stucki and C. Rizek-Pfister, September 04);
- the reports of the mandate „**Schlussevaluation des Programs SVC**“.

Questions concerning program design and execution aren't discussed in the reports of the mandate “SVC Status Reports and Project Monitoring”, because they were treated by the mandate „Schlussevaluation des Programs SVC“ under the direction of Prof. Dr. Karl Weber, Koordinationsstelle für Weiterbildung, Universität Bern.

Abbreviations

Abbreviations of the Names of Swiss Institutions of Higher Education

A more complete list can be found on www.switch.ch (in „About Us“; „Educational Links“).

UNI Universities

unibas	Universität Basel
unibe	Universität Bern
unifr	Université de Fribourg / Universität Freiburg
unige	Université de Genève
unil	Université de Lausanne
unilu	Universität Luzern
unine	Université de Neuchâtel
unisg	Universität St. Gallen
unizh	Universität Zürich (since March 2006: uzh)
usi	Università della Svizzera Italiana

ETH Eidgenössische Technische Hochschulen (Federal Institutes of Technology)

ethz	Eidgenössische Technische Hochschule Zürich
epfl	Ecole Polytechnique Fédérale de Lausanne

From the ETH domain

wsl-slf	Eidgenössische Forschungsanstalt für Wald, Schnee und Landschaft, Birmensdorf / Eidgenössischen Institut für Schnee- und Lawinenforschung, Davos, Teil der WSL
---------	---

UAS Universities of Applied Sciences

In Switzerland there are seven regions (Universities of Applied Sciences) with about 60 schools:

bfh	Berner Fachhochschule
fhnw	Fachhochschule Nordwestschweiz
fho	Fachhochschule Ostschweiz
fhz	Fachhochschule Zentralschweiz
hes-so	Haute Ecole Spécialisée de Suisse Occidentale
supsi	Scuola Universitaria Professionale della Svizzera Italiana
zfh	Zürcher Fachhochschule

Schools of the Universities of Applied Sciences participating in the SVC

eia	Ecole d'ingénieurs et d'architectes, Fribourg; hes-so
eif	Ecole d'ingénieurs et d'architectes, Fribourg; hes-so
eisi	Ecole d'Ingénieurs de St. Imier, Teilschule der Haute école Arc ingénierie:

	St. Imier, Porrentruy (Ecole d'ingénieurs de l'arc Jurassien); hes-so
ffhs	Fern-Fachhochschule Schweiz; supsi
fha	Fachhochschule Aargau Nordwestschweiz; fhnw
fhbb	Fachhochschule beider Basel; fhnw
fhsol	Fachhochschule Solothurn Nordwestschweiz; fhnw
fhw	Fachhochschule Wädenswil; zfh
heg	Haute Ecole de Gestion, Genève; hes-so
hev	Haute Ecole Valaisanne, Sion, Sierrre; hes-so
hsw	Hochschule für Wirtschaft; fhz
hsw	Hochschule Wädenswil; zfh
hgkk	Hochschule für Gestaltung, Kunst und Konservierung; bfh
hsr	Hochschule Rapperswil; fho
hta	Hochschule für Technik und Architektur, Bern; bfh
hti	Hochschule für Technik und Informatik, Biel; bfh
ntb	Interstaatliche Hochschule für Technik, Buchs; fho
zhw	Zürcher Hochschule Winterthur; zfh

Further Abbreviations

AAI Authentication and Authorization Infrastructure

Blended learning a mix of face-to-face teaching and self-study

Bologna reform (No English version available – German and French versions:)

Der Bolognaprozess, am 19. Juni 1999 mit der Unterzeichnung der Erklärung von Bologna formell eingeleitet, soll die Mobilität der Studierenden und die Zusammenarbeit zwischen den europäischen und internationalen Ausbildungsstätten nachhaltig verbessern. Übergreifende Ziele - wie Transparenz und Vergleichbarkeit im Interesse der europaweiten Mobilität - bestimmen die meisten Reformen: die Studienprogramme werden modernisiert, ein zweistufiges Studiensystem und ein transparentes Leistungspunktesystem (ECTS) werden eingeführt, um die gegenseitige Vergleichbarkeit von Studienabschlüssen zu erleichtern. Die Schweiz hat sich mit 29 weiteren europäischen Ländern verpflichtet, die Ziele der Erklärung von Bologna bis 2010 umzusetzen. (www.parlament.ch, Bologna-Reform in Kürze, aktualisiert: 12.11.2004)

Le processus de Bologne, qui a formellement débuté le 19 juin 1999, par la signature de la Déclaration de Bologne, vise à améliorer de manière durable la mobilité des étudiants et la collaboration entre les différents établissements de formation au niveau européen et international. Des objectifs globaux - transparence et comparabilité, dans l'intérêt de la mobilité européenne - président à la plupart des réformes : modernisation des programmes d'études, introduction d'un système d'études à deux cycles et d'un système de crédits transparent, afin de faciliter la comparaison entre

des diplômes obtenus dans des pays différents. La Suisse s'est engagée, avec 29 autres pays européens, à mettre en œuvre les objectifs de la Déclaration de Bologne d'ici à 2010. (www.parlament.ch, Réforme de Bologne en bref, actualisé: 12.11.2004)

CRUS	Conférence des Recteurs des Universités Suisses, Rektorenkonferenz der Schweizer Universitäten, Rector's Conference of the Swiss Universities
E-learning	Learning with information and communication technologies
EASA	European Academic Software Award, a competition organized by the European Knowledge Media Association (EKMA)
ECTS	European Credit Transfer System
edutech	Mandate of the SVC: technical consulting and support of the SVC; technical support group
ELML	„eLesson Modelling Language“, XML framework, for download on the edutech website or on sourceforge.net, under the Gnu Public License GPL
eQuality	Mandate of the SVC: pedagogical consulting and support for the SVC projects of the Impulse Program, in German, for assigned projects
InterSTICES	Mandate of the SVC: pedagogical consulting and support for the SVC projects of the Impulse Program, in French; for assigned projects
LMS	Learning Management System
MC	Multiple Choice Questions
NCS	National Content Server
OLAT	Open Learning And Teaching, an e-learning platform for large student numbers; open source development by the University of Zurich
Open Source	Open source code. Everyone can change and complete the program. All new products must be accessible publicly as Open Source code as well, according to the GNU General Public License, which is very often the legal foundation of open source products.
OPET	Federal Office for Professional Education and Technology
PDF	Portable Document Format
SER	State Secretariat for Education and Research
SVC	Swiss Virtual Campus, Virtueller Campus Schweiz, Campus Virtuel Suisse, Campus Virtuale Svizzera
SUC	Swiss University Conference
SWITCH	Swiss Education and Research Network
UAS	Universities of Applied Sciences
unitectra	Technologietransferstelle der Universitäten Bern und Zürich (office for technology transfer)
URL	Uniform Resource Locator, the global address of resources on the World Wide Web
XML	Extensible Markup Language, is used in SVC projects for structuring content